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(54) Title: POLYNUCLEOTIDE CAUSING RNA INTERFERE AND METHOD OF REGULATING GENE EXPRESSION WITH THE USE OF THE SAME

(54) 発明の名称: RNA干渉を生じさせるポリヌクレオチド、および、これを用いた遺伝子発現抑制方法

(57) Abstract: It is intended to provide a polynucleotide which exerts a high RNA interfere effect on a target gene but has little risk of causing RNA interfere on genes not relating to the target gene. From the base sequence of a target gene of RNA interfere, a sequence part following the rules (a) to (d) is detected and, based on the detection results, a polynucleotide causing RNAi is designed, synthesized and so on. (a) The 3'-terminal base is adenine, thymine or uracil. (b) The 5'-terminal base is guanine or cytosine. (c) The 3'-terminal sequence consisting of seven bases is rich in one or more bases selected from the group consisting of adenine, thymine and uracil. (d) The base number is at such a level as causing RNA interfere without expressing cytotoxicity.

(57) 要約: 本発明は、標的遺伝子に対して高いRNA干渉効果を有するとともに、標的遺伝子と関係のない遺伝子についてRNA干渉を生じる危険性が非常に小さいポリヌクレオチドを提供する。RNA干渉の標的遺伝子の塩基配列から、下記(a)から(d)の規則に従う配列部位を検索し、検索結果に基づきRNAiを生じさせるポリヌクレオチドの設計、合成等を行う。(a) 3'末端の塩基が、アデニン、チミンまたはウラシルである。(b) 5'末端の塩基が、グアニンまたはシトシンである。(c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれた1種または2種以上の塩基がリッチである。(d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせる数である。

明細書

RNA干渉を生じさせるポリヌクレオチド、および、
これを用いた遺伝子発現抑制方法

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技術分野

本発明は、RNA干渉を生じさせるポリヌクレオチドに関する。以下本明細書においてRNA干渉のことを「RNA i」と表記する場合がある。

10

背景技術

RNA干渉は、機能阻害したい遺伝子の特定領域と相同なセンスRNAとアンチセンスRNAからなる2本鎖RNA (double-stranded RNA、以下「dsRNA」という) が標的遺伝子の転写産物であるmRNAの相同部分を干渉破壊するという現象で、1998年に線虫を用いた実験により初めて
15 提唱された。しかし、哺乳類においては、約30塩基対以上の長いdsRNAを細胞内へ導入すると、インターフェロンレスポンスが誘導され、細胞がアポトーシスによって死んでしまうため、RNA i法を用いることが困難であった。

一方、マウス初期胚や哺乳類培養細胞では、RNA干渉が起こりえることが示され、RNA干渉の誘導機構そのものは、哺乳類細胞にも存在することがわかってきた。現在では、およそ21~23塩基対の短い2本鎖RNA (short interfering RNA、siRNA) が、哺乳類細胞系でも細胞毒性を示さずにRNA干渉を誘導できることが示され、哺乳類においてもRNA i法を利用することが可能となってきた。

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発明の開示

RNA i法は様々な応用が期待される技術である。しかし、ショウジョウバエや線虫では、ある遺伝子の特定領域と相同なdsRNAおよびsiRNAは、ほとんどの配列でRNA干渉効果を示すのに対して、哺乳類では無作為に選択した(21塩基の) siRNAの70~80%はRNA干渉効果を示さない。これは、



哺乳類においてRNA i法を用いた遺伝子機能解析を行う際に大きな問題点となっている。

また、従来siRNAを設計するにあたっては、試験者等の経験やセンスに依存する部分が大きく、実際にRNA干渉効果を示すsiRNAを高い確率で設計
5 することが困難であった。さらに、RNA合成は、費用、時間等を要することから、RNA干渉を行うために無駄なsiRNAを合成してしまうことは、RNA干渉のさらなる研究や、RNA干渉を利用した数々の利用法の普及を妨げる要因となっていた。

本発明は、上記問題の解決のために、siRNAとして有効に機能しうるポリ
10 ヌクレオチド、その設計方法、当該ポリヌクレオチドを用いた遺伝子発現抑制方法、当該ポリヌクレオチドを含む医薬組成物、遺伝子発現抑制組成物を提供することを目的とする。

図面の簡単な説明

15 図1は、ヒトとマウスとで共通配列であるsiRNAの設計を示す図である。

図2は、RNA i効果を示すsiRNAの規則性を示す図である。

図3は、ヒトFBP1およびマウスFbp1の塩基配列中の規定配列を有する
共通部位（太字部分）を示す図である。

図4は、ヒトFBP1およびマウスFbp1に共通の規定配列を列挙した図で
20 ある。

図5は、ヒトFBP1およびマウスFbp1に共通の規定配列にスコアを付した図である。

図6は、標的以外の遺伝子をノックアウトしないよう、規定配列のうちの1つ
をBLAST検索した結果を示す図である。

25 図7は、標的以外の遺伝子をノックアウトしないよう、規定配列のうちの1つ
をBLAST検索した結果を示す図である。

図8は、プログラムの出力結果を示す図である。

図9は、RNA断片の設計（a～p）を示す図である。

図10は、a～pのsiRNAがRNA i効果を示すか試験した結果を示す図

である。「B」はショウジョウバエ培養細胞における結果を、「C」はヒト培養細胞における結果を示す図である。

図11は、a～pのsiRNAの配列の特徴を分析した結果を示す図である。

図12は、本発明の基本原理を示す原理構成図である。

- 5 図13は、本発明が適用される本システムの塩基配列処理装置100の構成の一例を示すブロック図である。

図14は、標的遺伝子塩基配列ファイル106aに格納される情報の一例を示す図である。

- 10 図15は、部分塩基配列ファイル106bに格納される情報の一例を示す図である。

図16は、判定結果ファイル106cに格納される情報の一例を示す図である。

図17は、規定配列ファイル106dに格納される情報の一例を示す図である。

図18は、参照配列データベース106eに格納される情報の一例を示す図である。

- 15 図19は、同一類似度ファイル106fに格納される情報の一例を示す図である。

図20は、評価結果ファイル106gに格納される情報の一例を示す図である。

図21は、本発明が適用される本システムの部分塩基配列作成部102aの構成の一例を示すブロック図である。

- 20 図22は、本発明が適用される本システムの無関係遺伝子標的評価部102hの構成の一例を示すブロック図である。

図23は、本実施形態における本システムのメイン処理の一例を示すフローチャートである。

- 25 図24は、本実施形態における本システムの無関係遺伝子標的評価処理の一例を示すフローチャートである。

図25は、標的発現ベクターpTRE Cの構造を示す図である。

図26は、実施例2の2.(2)におけるプライマーの一方がイントロンを挟む形でデザインされていない場合のPCRの結果を示す図である。

図27は、実施例2の2.(2)におけるプライマーの一方がイントロンを挟む

形でデザインされている場合のPCRの結果を示す図である。

図28は、siRNA;siVIM35の配列および構造を示す図である。

図29は、siRNA;siVIM812の配列および構造を示す図である。

図30は、siRNA;siControlの配列および構造を示す図である。

- 5 図31は、siVIM812およびsiVIM35のRNAi活性をアッセイした結果を示す図である。

図32は、siControl、siVIM812およびsiVIM35のビメンチンに対するRNAi活性を示す図である。

図33は、抗体染色の結果を示す図である。

- 10 図34は、プログラムにより設計されたsiRNAのルシフェラーゼ遺伝子に対するRNAi活性の測定結果を示す図である。

図35は、プログラムにより設計されたsiRNAのSARSウイルスが有する配列に対するRNAi活性の測定結果を示す図である。

- 15 図36は、プログラムにより設計されたsiRNAとのミスマッチ数が小さい配列を含む他の遺伝子に対するRNAi活性の測定結果を示す図である。

図37は、アポトーシスに関与している遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を示す図である。

図38は、ホスファターゼおよびホスファターゼ活性に関与している遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を示す図である。

- 20 図39は、細胞周期に関係している遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を示す図である。

図40は、レセプターに関与している遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を示す図である。

- 25 図41は、イオンチャンネルをコードしている遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を示す図である。

図42は、シグナル伝達系に関与している遺伝子と遺伝子オントロジーにおけるGO_ID（との関係を示す図である。

図43は、キナーゼおよびキナーゼ活性に関与している遺伝子と遺伝子オントロジーにおけるGO_IDの関係を示す図である。

図44は、転写制御に関与している遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を示す図である。

図45は、Gタンパク質共役レセプター（GPCR）およびGPCRに関与している遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を示す図である。

図46は、本発明のポリヌクレオチドの標的となる標的配列、遺伝子、生物学的機能カテゴリー、文献情報に基づく生物学的機能、関連する疾患の関係を示す図である。

図46の「遺伝子名」および「refseq_NO.」は、NCBIの「RefSeq」
(HYPERLINK"<http://www.ncbi.nlm.nih.gov/>" <http://www.ncbi.nlm.nih.gov/>)
に対応するものであり、RefSeqにアクセスすることによって、各遺伝子の情報(遺伝子の配列、機能等)を取得することができる。

図46中の「標的配列」の欄に記載された配列において、実際にRNAiの標的となる配列は5'末端から3番目の塩基から3'末端から3番目までの塩基である。即ち、図46中の「標的配列」の配列では、5'末端および3'末端に2塩基ずつRNAiの標的となる配列に隣接する配列が記載されている。本願明細書及び請求の範囲中、狭義の「規定配列」とは、実際にRNAiの標的となる配列を意味し、例えば、図46中の「標的配列」の5'末端から3番目の塩基から3'末端から3番目までの塩基に相当する。ただし便宜のため、本願明細書及び請求の範囲中、「規定配列」「標的配列」とともに、文意により、狭義の「規定配列」と同義、或いは、図46中の「標的配列」と同様に、狭義の「規定配列」に5'末端および3'末端に2塩基ずつRNAiの標的となる配列に隣接する配列が付加された配列、の双方の意味で使用される。

本明細書および請求の範囲の記載において、特に明示しない限り、「5'末端の塩基」とは図46中の「標的配列」に記載の配列の5'末端から3番目の塩基、そして、「3'末端の塩基」とは図46中の「標的配列」に記載の配列の3'末端から3番目の塩基を意味する。よって、図46中の「標的位置」とは、図46中の「標的配列」の欄に記載した各配列の5'末端から3番目の塩基（例えば、整理番号1の標的配列では「g」）の、各遺伝子の配列中での相当する位置を意味す

る。

図46中の「配列番号(ヒト)」および「配列番号(マウス)」は本明細書に添付の配列表中の各標的配列が記載されている配列番号を意味し、同一の整理番号における標的配列はヒトとマウスで同一である。

5

発明の詳細な説明

本発明者らは、上記課題を解決するために、RNAi法を用いる際最も労力、時間、費用を要する部分の1つである、siRNAの入手を容易に行う手法について検討を進めた。siRNAの調製は哺乳類において特に問題となっていることから、本発明者らは哺乳類培養細胞系を用いて、RNA干渉に有効なsiRNAの配列規則性を同定することを試みたところ、有効なsiRNAの配列には所定の規則性があることを見いだし、本発明を完成するに至った。すなわち、本発明は、次の通りである。

15 [1] 目的生物の遺伝子の中から選ばれる標的遺伝子について、RNA干渉を生じさせるポリヌクレオチドであって、

少なくとも2本鎖領域を有し、

前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(d)の規則:

- (a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり;
- 20 (b) 5'末端の塩基が、グアニンまたはシトシンであり;
- (c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり;
- (d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であるに従う規定配列と相同な塩基配列からなり、そして

25 前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなることを特徴とするポリヌクレオチド。

[2] 前記規定配列と相同な塩基配列の少なくとも80%以上の塩基が、前記規定配列の塩基配列と一致することを特徴とする[1]に記載のポリヌクレオ

チド。

〔3〕 前記規則（c）において、7塩基のうち少なくとも3塩基以上がアデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上であることを特徴とする〔1〕または〔2〕に記載のポリヌクレオチド。

5 〔4〕 前記規則（d）において、塩基数が13～28であることを特徴とする〔1〕～〔3〕のいずれか一項に記載のポリヌクレオチド。

〔5〕 前記規定配列が、さらに下記（e）の規則：

（e）10塩基以上グアニンまたはシトシンが連続する配列を含まないに従う配列であることを特徴とする請求項1～4のいずれか一項に記載のポリヌクレオチド。

10 〔6〕 前記規定配列が、さらに下記（f）の規則：

（f）目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と90%以上の相同性を有する配列が含まれないに従う配列であることを特徴とする〔5〕に記載のポリヌクレオチド。

15 〔7〕 前記規定配列が、配列表配列番号47～配列番号817081のいずれかに記載の塩基配列からなることを特徴とする〔6〕に記載のポリヌクレオチド。

〔8〕 前記規定配列が、図46の標的配列の欄に記載された配列であることを特徴とする〔6〕に記載のポリヌクレオチド。

20 〔9〕 配列番号817102ないし817651のいずれかの塩基配列を有することを特徴とする〔6〕に記載のポリヌクレオチド。

〔10〕 2本鎖ポリヌクレオチドであることを特徴とする〔1〕～〔9〕のいずれか一項に記載のポリヌクレオチド。

25 〔11〕 前記2本鎖ポリヌクレオチドの一方の鎖が、前記規定配列と相同な塩基配列の3'末端にオーバーハング部を有する塩基配列からなり、前記2本鎖ポリヌクレオチドの他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の3'末端にオーバーハング部を有する塩基配列からなることを特徴とする〔10〕に記載のポリヌクレオチド。

〔12〕 ヘアピン構造を有する1本鎖ポリヌクレオチドであり、前記2本

鎖領域における一方の鎖の3'末端と、前記2本鎖領域における他方の鎖の5'末端とを連結するループ部を有することを特徴とする〔1〕～〔9〕のいずれか一項に記載のポリヌクレオチド。

〔13〕 発現を抑制しようとする標的遺伝子の発現系に導入するポリヌクレオチドの選択方法であって、

少なくとも2本鎖領域を有し、

前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(f)の規則：

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり；

(b) 5'末端の塩基が、グアニンまたはシトシンであり；

(c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり；

(d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であり、；

(e) 10塩基以上グアニンまたはシトシンが連続する配列を含まず；

(f) 目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と90%以上の相同性を有する配列が含まれない

に従う規定配列と相同な塩基配列からなり、そして、

前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなるポリヌクレオチドを選択することを特徴とする

ポリヌクレオチドの選択方法。

〔14〕 前記選択したポリヌクレオチドから、さらに、前記標的遺伝子の規定配列と相同な塩基配列が、前記標的遺伝子以外の他の遺伝子の塩基配列とのミスマッチ数が少なくとも3塩基であり、かつ、当該少なくとも3塩基のミスマッチを有する塩基配列を有する他の遺伝子の数が最も少ない配列であるポリヌクレオチドを選択することを特徴とする〔13〕に記載のポリヌクレオチドの選択方法。

〔15〕 〔1〕～〔12〕のいずれか一項に記載のポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制することを特徴とする遺伝子発現抑制方法。

〔１６〕 〔１３〕または〔１４〕に記載の方法により選択されたポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制することを特徴とする遺伝子発現抑制方法。

〔１７〕 ５０％以下に発現を抑制することを特徴とする〔１５〕または〔１
５ ６〕に記載の遺伝子発現抑制方法。

〔１８〕 医薬的に有効な量の、〔１〕～〔１２〕のいずれか一項に記載のポリヌクレオチドを含む、医薬用組成物。

〔１９〕 図４６の関連疾患名の欄に記載の疾患を治療または予防するための、〔１８〕に記載の医薬用組成物。

１０ 〔２０〕 図４６の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予防するための、〔１８〕に記載の医薬用組成物。

〔２１〕 以下１）～９）のいずれかに属する遺伝子が関与する疾患を治療または予防するための、〔１８〕に記載の医薬組成物

１）アポトーシスに関与している遺伝子；

１５ ２）ホスファターゼおよびホスファターゼ活性に関与している遺伝子；

３）細胞周期に関与している遺伝子；

４）レセプターに関与している遺伝子；

５）イオンチャネルに関与している遺伝子；

６）シグナル伝達系に関与している遺伝子；

２０ ７）キナーゼおよびキナーゼ活性に関与している遺伝子；

８）転写制御に関与している遺伝子；あるいは

９）Ｇタンパク質共役レセプターまたはＧタンパク質共役レセプターに関与している遺伝子。

〔２２〕 図４６の配列番号（ヒト）または配列番号（マウス）の欄に記載の
２５ 配列番号のいずれかの塩基配列を標的配列とするポリヌクレオチドを含む、〔１８〕～〔２１〕のいずれか一項に記載の医薬組成物。

〔２３〕 表１の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予防するための、〔１８〕に記載の医薬用組成物。

〔２４〕 膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣

癌、膀胱癌、前立腺癌、口腔癌、皮膚癌、並びに甲状腺癌から選択される、いずれかの癌を治療または予防するための、〔18〕または〔23〕に記載の医薬組成物。

〔25〕 配列番号 817102ないし 817651のいずれかの塩基配列を有するポリヌクレオチドを含む、〔18〕、〔23〕または〔24〕のいずれか一項

5 に記載の医薬組成物。

〔26〕 〔1〕～〔12〕のいずれか一項に記載のポリヌクレオチドを含む、標的遺伝子の発現を抑制するための遺伝子発現抑制用組成物。

〔27〕 標的遺伝子が、図46の関連疾患名の欄に記載の疾患のいずれかの疾患に関連する、〔26〕に記載の遺伝子発現抑制用組成物。

10 〔28〕 標的遺伝子が、図46の遺伝子名の欄に記載された遺伝子のいずれかである、〔26〕に記載の遺伝子発現抑制用組成物。

〔29〕 標的遺伝子が、以下1)－9)のいずれかに属する遺伝子である、〔26〕に記載の遺伝子発現抑制用組成物

1) アポトーシスに関与している遺伝子；

15 2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；

3) 細胞周期に関与している遺伝子；

4) レセプターに関与している遺伝子；

5) イオンチャネルに関与している遺伝子；

6) シグナル伝達系に関与している遺伝子；

20 7) キナーゼおよびキナーゼ活性に関与している遺伝子；

8) 転写制御に関与している遺伝子；あるいは

9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

〔30〕 標的遺伝子が、表1の遺伝子名の欄に記載された遺伝子のいずれか
25 である、〔26〕に記載の遺伝子発現抑制用組成物。

〔31〕 標的遺伝子が、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膀胱癌、前立腺癌、口腔癌、皮膚癌並びに甲状腺癌から選択される、いずれかの癌に関連する遺伝子である、〔26〕に記載の遺伝子発現抑制用組成物。

〔 3 2 〕 医薬的に有効な量の、〔 1 〕 ～ 〔 1 2 〕 のいずれか一項に記載のポリヌクレオチドを投与することを含む、図 4 6 の関連疾患名の欄に記載の疾患を治療または予防するための方法。

発明の効果

- 5 本発明のポリヌクレオチドは、標的遺伝子に対して高いRNA干渉効果を有するとともに、標的遺伝子と関係のない遺伝子についてRNA干渉を生じる危険性が非常に小さいため、発現を抑制しようとする標的遺伝子のみに特異的にRNA干渉を生じさせることができる。したがって、本発明のポリヌクレオチドは、RNA干渉を利用する試験、治療方法等に好適に利用することができ、哺乳類などの高等動物、特にヒトを対象とするRNA干渉を行う際に特に有効性を発揮するものである。
- 10

発明を実施するための態様

本発明の実施の形態を、以下の< 1 >から< 7 >の順に従って説明する。

- 15 < 1 > RNA干渉の標的塩基配列検索方法
< 2 > RNA干渉を生じさせるポリヌクレオチドの塩基配列設計方法
< 3 > ポリヌクレオチドの作製方法
< 4 > 遺伝子の発現抑制方法
< 5 > siRNA配列設計プログラム
20 < 6 > siRNA配列設計ビジネスモデルシステム
< 7 > siRNA配列設計プログラムを実行する塩基配列処理装置等
< 8 > 医薬用組成物
< 9 > 遺伝子発現抑制用組成物
< 1 0 > 治療または予防方法
- 25

< 1 > RNA干渉の標的塩基配列検索方法

本発明の検索方法は、目的生物の遺伝子の中から選ばれる標的遺伝子の塩基配列の中から、RNA干渉の起因となる塩基配列を探し出す方法である。RNA干渉を生じさせる対象となる目的生物は、特に限定されず、大腸菌をはじめとする原

核生物、酵母、真菌等の微生物、哺乳類をはじめとする動物、昆虫、植物等のいずれでも良い。

具体的には、本発明の検索方法では、RNA干渉の標的遺伝子の塩基配列から、下記（a）から（d）の規則に従う配列部位を検索する。

5 （a）3'末端の塩基が、アデニン、チミンまたはウラシルである。

 （b）5'末端の塩基が、グアニンまたはシトシンである。

 （c）3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチである。

 （d）塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数である。

10 「標的遺伝子」における「遺伝子」とは、遺伝情報をコードする媒体のこという。「遺伝子」はDNA、RNA、DNAおよびRNAの複合体など遺伝情報をコードする物質により構成されるが、遺伝情報としては物質そのものではなく塩基配列を電子データ化したものをコンピュータ上などで扱うことが可能である。

 「標的遺伝子」は、1つのコード領域としてもよいし、複数のコード領域に渡り
15 標的としてもよいし、また、配列が判明したすべてのポリヌクレオチドを標的としてもよい。特定の機能を有する遺伝子について検索したい場合には、その特定遺伝子のみを標的とすることにより、当該特定遺伝子に特異的にRNA干渉を生じさせる塩基配列を効率よく検索することができる。すなわち、RNA干渉はmRNAを干渉破壊する現象として知られており、特定のコード領域を選択することにより検索負荷を軽減できる。また、転写領域のひとつとまりを標的遺伝子として検索してもよい。なお、本明細書において塩基配列は特に断らない限りセンス鎖、すなわち、mRNAの配列を基準として示す。また、本明細書中では上記
20 （a）から（d）の規則を満たす塩基配列のことを「規定配列」という。上記規則においては、塩基配列がDNAの配列であればチミンが、RNAの配列であればウラシルが対応する。
25

規則（c）は、3'末端近傍の配列にアデニン、チミン、およびウラシルからなる群より選ばれる塩基がリッチに含まれていることを規定しており、具体的に検索を行う際の一指標として3'末端部から7塩基の範囲内において、アデニン、チミン、およびウラシルから選ばれる塩基がリッチな配列であることを規定してい

る。

規則(c)において、「リッチな配列」とは特定の塩基が現れる頻度が高いことを意味し、割合を概略的に示すと、規定配列における3'末端側の5~10塩基、好ましくは7塩基の配列中にアデニン、チミンおよびウラシルからなる群より選ば
5 ばれる1種または2種以上が、少なくとも40%以上、より好ましくは50%以上含まれることを意味する。より具体的には、例えば約19塩基程度の規定配列の場合を例に挙げると、3'末端側の7塩基のうち好ましくは少なくとも3塩基以上、より好ましくは4塩基以上、特に好ましくは5塩基以上が、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上である。

10 規則(c)に該当するか否かを確認する手段は特に制限はなく、7塩基中の好ましくは3塩基以上、より好ましくは4塩基以上、特に好ましくは5塩基以上がアデニン、チミンまたはウラシルであることを確認できればよい。例えば、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上が、3'末端側の7塩基の配列中に3つ以上含まれることをリッチであると定義した場合
15 を例として説明すると、3'末端の第1番目の塩基から逐次上記3種の塩基のいずれかであるか照合し、第7番目の塩基に至るまでに3つ現れた場合に、規則(c)に適合すると判断することができる。例えば、第3番目までに3つ現れれば、3つの塩基を調べれば足りる。すなわち、規則(c)について検索する場合、必ずしも3'末端側の7塩基についてすべて照合することは要しない。逆に第7番目ま
20 でに3つ以上現れなければリッチではなく、規則(c)を満たさないと判断される。

二本鎖ポリヌクレオチドにおいてはアデニンとチミンまたはウラシルとが相補的に水素結合することは周知である。また、グアニンとシトシンとの相補的な水素結合(G-C水素結合)においては3つの水素結合部位が形成されるのに対し、
25 アデニンとチミンまたはウラシルとの相補的水素結合(A-(T/U)水素結合)においては2つの水素結合部位からなり、一般的に言ってG-C水素結合に対し、A-(T/U)水素結合のほうが結合力は弱い。

規則(d)においては、検索する塩基配列の塩基数を規定している。検索する塩基配列の塩基数は、RNA干渉を生じさせ得る塩基数である。また、生物の種

類などの条件により、塩基数があまりに大きすぎる s i RNA では細胞毒性を生じてしまうことが知られている。塩基数の上限は、RNA 干渉を生じさせようとする生物の種類などにより異なるが、s i RNA を構成する一本鎖の塩基数はいずれの種にせよ 30 以下であることが好ましい。また、哺乳動物の塩基数にあっては、好ましくは 24 以下、より好ましくは 22 以下である。また、下限は RNA 干渉を生じさせる限りにおいて特に制限されるものではないが、好ましくは 15 以上、より好ましくは 18 以上、さらに好ましくは 20 以上である。s i RNA を構成する一本鎖としての塩基数は、21 で検索することが特に好ましい。

なお、下記にても説明するが、s i RNA には、規定配列の 3' 末端にオーバーハング部が設けられる。オーバーハング部は塩基数 2 であることが好適である。したがって、オーバーハング部を含めず、規定配列のみの塩基数の上限としては、好ましくは 28 以下、より好ましくは 22 以下、さらに好ましくは 20 以下であり、下限としては、好ましくは 13 以上、より好ましくは 16 以上、さらに好ましくは 18 以上である。規定配列の最も好ましい塩基数は 19 である。RNA i の標的塩基配列の検索は、オーバーハング部を含める場合および含めない場合のいずれで検索してもよい。

規定配列に従う塩基配列は、RNA 干渉を生じさせる確率が極めて高い。したがって、本発明の検索方法により、RNA 干渉を生じさせる配列を極めて高い確率で検索することが可能であり、RNA 干渉を生じさせるポリヌクレオチドの設計を簡便化することができる。

また、他の好ましい例として、規定配列が、さらに下記の規則 (e) に従う配列であることが挙げられる。(e) 10 塩基以上グアニンまたはシトシンが連続する配列を含まない。

規則 (e) においては、検索する塩基配列が、10 塩基以上グアニン (G) および/またはシトシン (C) が連続した配列を含まない配列であることを規定している。10 塩基以上グアニンおよび/またはシトシンが連続するというのは、例えば、グアニンまたはシトシンの一方のみが連続する場合と、グアニンおよびシトシンとが混在する配列となっている場合の双方を含み、より具体的には、GGGGGGGGGG、CCCCCCCCCC のほか、G および C の混合配列であ

る G C G G C C C G C G など含まれる。

また、標的遺伝子と関係のない遺伝子についてまで RNA 干渉を生じさせないようにするためには、設計した配列と同一または類似の配列が他の遺伝子に含まれていないか検索することが好ましい。設計した配列と同一または類似の配列の
5 検索は、一般的なホモロジー検索を行うことができるソフトウェア等を用いて行えばよい。この際、s i RNA の 2 本の鎖（センス鎖およびアンチセンス鎖）による RNA i 効果を考慮して、「設計した配列」および「設計した配列と相補的な塩基配列を有する配列（相補配列）」の両方について、同一または類似の配列が他の遺伝子に含まれていないか検索することがより好ましい。設計した配列のうち、
10 設計した配列またはその相補配列と同一／類似配列を有する配列を除外することにより、標的とする遺伝子のみに特異的に RNA 干渉を生じさせる配列を設計することができる。

したがって、設計した配列のうち、他の遺伝子に塩基配列のミスマッチ数が小さい類似配列が存在するような配列を除外することにより、特異性の高い配列を
15 選別することができる。例えば、塩基数 19 の塩基配列を設計する場合、他の遺伝子にミスマッチが 2 塩基以下の類似配列が存在する配列は、除外することが好ましい。ここで類似性判断の閾値となるミスマッチ数の値を大きく設定するほど、設計する配列の特異性が高まる。塩基数 19 の塩基配列を設計する場合、より好ましくは、他の遺伝子にミスマッチが 3 塩基以下の類似配列が存在する配列を除
20 外することが好ましく、さらに好ましくは、他の遺伝子にミスマッチが 4 塩基以下の類似配列が存在する配列を除外することが好ましい。また、当該規定配列を有する配列およびその相補配列の両方について、塩基配列のミスマッチ数が小さい類似配列が他の遺伝子に存在するような配列を除外することにより、より特異性の高い配列を設計することができるため、好ましい。

25 配列の類似性を判断する基準となるミスマッチ数は、設計する配列の塩基数によっても異なるため、一概に規定することは難しい。塩基配列のミスマッチ数を相同性で規定することとすると、下記の規則（f）に従う配列であるか検索すればよい。（f）目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列を有する配列と 90 % 以上の相同性を有する配列が含

まれない。

規則（f）において、標的遺伝子以外の他の遺伝子の塩基配列中に、規定配列と85%以上の相同性を有する配列が含まれないことが好ましく、規定配列と80%以上の相同性を有する配列が含まれないことがより好ましく、規定配列と75%以上の相同性を有する配列が含まれないことが好ましい。また、ここで、当該規定配列を有する配列およびその相補配列の両方について、塩基配列の相同性が高い類似配列が他の遺伝子に存在するような配列を除外することにより、より特異性の高い配列を設計することができるため、好ましい。

なお、規定配列の検索は、塩基数を定めた上で上記の（a）から（c）の規則などに従う部分を検索するようなプログラムを搭載するコンピュータを用いて効率的に検出可能である。より具体的な実施の形態は下記<5> siRNA配列設計プログラム、および、<7> siRNA配列設計プログラムを実行する塩基配列処理装置等の欄に示す。

本願の配列表配列番号47～817081に記載のポリヌクレオチドは、上記（a）～（f）の規則を満たす規定配列（を含む標的配列）として、選択されたヒト及びマウスの配列である。

<2> RNA干渉を生じさせるポリヌクレオチドの塩基配列設計方法

本発明の塩基配列設計方法は、上記の検索方法により検索された塩基配列に基づいてRNA干渉を生じさせるポリヌクレオチドの塩基配列を設計するものである。RNA干渉を生じさせるポリヌクレオチドは、上記の検索方法により検索された規定配列に基づいて設計された2本鎖領域を有するポリヌクレオチドであり、標的遺伝子について、RNA干渉を生じさせることができるものであれば、特に限定されない。

RNA干渉を生じさせるポリヌクレオチドとしては、主として、siRNA等の2本鎖ポリヌクレオチド型と、ヘアピン構造を有するRNA（short hairpin RNA: shRNA）等の1本鎖ポリヌクレオチド型に分類することができる。

siRNAやshRNAは、主としてRNAからなるが、一部にDNAが含まれている混成ポリヌクレオチドも含まれる。本発明の塩基配列設計方法では、上

記 (a) から (d) の規則に従う塩基配列を標的遺伝子の塩基配列から検索し、検索された塩基配列と相同な塩基配列を設計する。また、他の好ましい設計例としては、上記 (e) および (f) の規則などを考慮してもよい。(a) から (d) の規則および検索の手法などについては、上記本発明の検索方法について説明したとおりである。

RNA干渉を生じさせるポリヌクレオチドにおける2本鎖領域は、一方の鎖が、標的遺伝子の塩基配列中に含まれる、上記 (a) から (d) の規則に従う規定配列と相同な塩基配列からなり、他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなる。「相同な配列」とは、同一の配列および当該RNA干渉を生じさせるという機能を失わない範囲で同一配列に対し欠失、置換、挿入などの変異を含む配列のことをいう。標的遺伝子の種類、配列などの条件にもよるが、許容される変異を相同性（ホモロジー）で例示すると、好ましくは80%以上、より好ましくは90%以上、さらに好ましくは95%以上である。許容される変異の程度としての相同性を算出する場合、同一の検索アルゴリズムを用いて算出された数値どうしを比較することが望ましい。検索アルゴリズムは特に限定されないが、局所的な配列の検索に適したものが好適であり、より具体的にはBLAST、searchなどを好適に用いることができる。

より詳細には、核酸（ポリヌクレオチド）の同一性パーセントは、視覚的検査および数学的計算によって決定することが可能である。あるいは、2つの核酸配列のパーセント同一性は、目視検査と数学的計算により決定可能であるか、またはより好ましくは、この比較はコンピュータ・プログラムを使用して配列情報を比較することによってなされる。代表的な、好ましいコンピュータ・プログラムは、遺伝学コンピュータ・グループ（GCG；ウィスコンシン州マジソン）のウィスコンシン・パッケージ、バージョン10.0プログラム「GAP」である（Dereuxら、1984、Nucl. Acids Res. 12:387）。この「GAP」プログラムの使用により、2つの核酸配列の比較の他に、2つのアミノ酸配列の比較、核酸配列とアミノ酸配列との比較を行うことができる。ここで、「GAP」プログラムの好ましいデフォルトパラメーターには：(1) ヌクレオチドについての（同一物について1、および非同物について0の値を含む）

一元 (unary) 比較マトリックスのGCG実行と、SchwartzおよびDayhoff監修「ポリペプチドの配列および構造のアトラス(Atlas of Polypeptide SequenceおよびStructure)」国立バイオ医学研究財団、353-358頁、1979により記載されるような、

5 GribnikovおよびBurgess, Nucl. Acids Res. 14: 6745, 1986の加重アミノ酸比較マトリックス;または他の比較可能な比較マトリックス;(2)アミノ酸の各ギャップについて30のペナルティと各ギャップ中の各記号について追加の1のペナルティ;またはヌクレオチド配列の各ギャップについて50のペナルティと各ギャップ中の各記号について追加の3のペナルティ;(3)エンドギャップへのノーペナルティ;および(4)長いギャップへは最大ペナルティなし、が含まれる。当業者により使用される他の配列比較プログラムでは、例えば、国立医学ライブラリーのウェブサイト:<http://www.ncbi.nlm.nih.gov/blast/bl2seq/bls.html>により使用が利用可能なBLASTNプログラム、バージョン2.

10 2.7、またはUW-BLAST2.0アルゴリズムが使用可能である。UW-BLAST2.0についての標準的なデフォルトパラメーターの設定は、以下のインターネットサイト:<http://blast.wustl.edu>に記載されている。さらに、BLASTアルゴリズムは、BLOSUM62アミノ酸スコア付けマトリックスを使用し、使用可能である選択パラメーターは以下の通り

20 である:(A)低い組成複雑性を有するクエリー配列のセグメント(WoottonおよびFederhenのSEGプログラム(Computers and Chemistry, 1993)により決定され;WoottonおよびFederhen, 1996「配列データベースにおける組成偏重領域の解析(Analysis of compositionally biased regions in sequence databases)」Methods Enzymol. 266:544-71も参照されたい)、または、短周期性の内部リピートからなるセグメント(ClaverieおよびStates(Computers and Chemistry, 1993)のXNUプログラムにより決定される)をマスクするためのフィルターを含むこと、および(B)データベ

ース配列に対する適合を報告するための統計学的有意性の閾値、またはE-スコア (KarlinおよびAltschul, 1990) の統計学的モデルにしたがって、単に偶然により見出される適合の期待確率; ある適合に起因する統計学的有意差がE-スコア閾値より大きい場合、この適合は報告されない); 好ましいE-スコア閾値の数値は0.5であるか、または好ましさが増える順に、0.25、0.1、0.05、0.01、0.001、0.0001、 $1e-5$ 、 $1e-10$ 、 $1e-15$ 、 $1e-20$ 、 $1e-25$ 、 $1e-30$ 、 $1e-40$ 、 $1e-50$ 、 $1e-75$ 、または $1e-100$ である。

本発明のポリヌクレオチドはまた、上記(a)から(d)の規則に従う規定配列と「相同な塩基配列」として、規定配列にストリンジェントな条件下、例えば、中程度または高程度にストリンジェントな条件下でハイブリダイズすることが可能であり、そして、好ましくは、RNA干渉を生じさせる活性を有するポリヌクレオチドを含む。

「ストリンジェントな条件下」とは、中程度または高程度にストリンジェントな条件においてハイブリダイズすることを意味する。具体的には、中程度にストリンジェントな条件は、例えば、DNAの長さに基づき、一般の技術を有する当業者によって、容易に決定することが可能である。基本的な条件は、Sambrookら、Molecular Cloning: A Laboratory Manual, 第3版, 第6-7章, Cold Spring Harbor Laboratory Press, 2001に示され、そしてニトロセルロースフィルターに関し、 $5\times\text{SSC}$ 、0.5% SDS、1.0mM EDTA (pH 8.0) の前洗浄溶液、約40-50℃での、約50%ホルムアミド、 $2\times\text{SSC}-6\times\text{SSC}$ (または約42℃での約50%ホルムアミド中の、スターク溶液 (Stark's solution) などの他の同様のハイブリダイゼーション溶液) のハイブリダイゼーション条件、および約60℃、 $0.5\times\text{SSC}$ 、0.1% SDSの洗浄条件の使用が含まれる。好ましくは中程度にストリンジェントな条件は、約50℃、 $6\times\text{SSC}$ のハイブリダイゼーション条件を含む。高ストリンジェントな条件もまた、例えばDNAの長さに基づき、当業者によって、容易に決定することが可能である。一般に、こうした条件は、中程度にスト

リンジェントな条件よりも高い温度および／または低い塩濃度でのハイブリダイゼーション（例えば、約65℃、6×SSCないし0.2×SSC、好ましくは6×SSC、より好ましくは2×SSC、最も好ましくは0.2×SSCのハイブリダイゼーション）および／または洗浄を含み、例えば上記のようなハイブリダイゼーション条件、およびおよそ68℃、0.2×SSC、0.1% SDSの洗浄を伴うと定義される。ハイブリダイゼーションおよび洗浄の緩衝液では、SSC（1×SSCは、0.15M NaClおよび15mM クエン酸ナトリウムである）にSSPE（1×SSPEは、0.15M NaCl、10mM NaH₂PO₄、および1.25mM EDTA、pH7.4である）を代用することが可能であり、洗浄はハイブリダイゼーションが完了した後で15分間行う。

当業者に知られていて、以下にさらに記載したように、ハイブリダイゼーション反応と二本鎖の安定性を支配する基本原理を適用することによって望ましい度合いのストリンジェンシーを達成するためには、洗浄温度と洗浄塩濃度を必要に応じて調整することが可能であると理解すべきである（例えば、Sambrookら、2001を参照されたい）。核酸を未知配列の標的核酸へハイブリダイズさせる場合、ハイブリッドの長さはハイブリダイズする核酸のそれであると仮定される。既知配列の核酸をハイブリダイズさせる場合、ハイブリッドの長さは核酸の配列を並列し、最適な配列相補性をもつ単数または複数の領域を同定することによって決定可能である。50塩基対未満の長さであることが予測されるハイブリッドのハイブリダイゼーション温度は、ハイブリッドの融解温度（ T_m ）より5-25℃低くなければならず、 T_m は、以下の等式により決定される。長さ18塩基対未満のハイブリッドに関して、 T_m （℃）= 2（A+T塩基数）+ 4（G+C塩基数）。18塩基対を超える長さのハイブリッドに関しては、 T_m = 81.5℃ + 16.6（log₁₀ [Na⁺]) + 41（モル分率 [G+C]) - 0.63（%ホルムアミド）- 500/nであり、ここで、Nはハイブリッド中の塩基数であり、そして [Na⁺] は、ハイブリダイゼーション緩衝液中のナトリウムイオン濃度である（1×SSCの [Na⁺] = 0.165M）。

上記のように、検索された配列は若干の改変が許容されるが、設計される塩基配列の塩基数は、検索された配列と同一とすることが特に好ましい。塩基数を同

一とした場合について改変の許容度を例示すると、設計される塩基配列の塩基が、好ましくは80%以上、より好ましくは90%以上、特に好ましくは95%以上検索された配列と一致することが好適である。例えば、塩基数19の塩基配列を設計する場合であれば、好ましくは16塩基以上、より好ましくは18塩基以上

5 が、検索された塩基配列と一致することが好ましい。また、検索された塩基配列と相同な配列を設計する場合、検索された塩基配列の3'末端の塩基と設計される塩基配列の3'末端の塩基とは同一であることが望ましく、また、検索された塩基配列の5'末端の塩基と設計される塩基配列の5'末端の塩基とが同一であることが望ましい。

10 通常 siRNA 分子には、オーバーハング部が設けられる。オーバーハング部とは、2本鎖の siRNA 分子において、各鎖の3'末端に設けられた、一本鎖の状態で突出した部分である。オーバーハング部は、生物の種類などにもよるが、塩基数は2が特に好適である。オーバーハング部の塩基配列は、基本的には任意であるが、検索元の標的遺伝子と同一の塩基配列、TT、あるいはUUなどが好

15 適に用いられる場合がある。上記のように検索された塩基配列と相同な配列となるように設計された規定配列の3'末端に、オーバーハング部を設けることにより、siRNAを構成するセンス鎖が設計される。

また、最初から規定配列およびオーバーハング部を含めて検索を行い、設計することもできる。オーバーハング部の好ましい塩基数は2である。したがって、

20 例えば、塩基数19の規定配列および塩基数2のオーバーハング部からなる siRNA を構成する一本鎖の設計をする場合には、オーバーハング部を含めた siRNA の塩基数としては塩基数21の配列を標的遺伝子から検索すればよく、また2本鎖の状態について検索する場合には、塩基数23の配列を検索してもよい。

shRNAは、前記2本鎖領域における一方の鎖の3'末端と、前記2本鎖領域

25 における他方の鎖の5'末端とをループ部で連結することによって1本鎖ポリヌクレオチドとしたものである。shRNAは、前記一方の鎖の5'末端および／または前記他方の鎖の3'末端に、一本鎖の状態で突出した部分を有していても良い。このようなshRNAは、WO 01/49844等、公知の手法に従って設計することができる。

本発明の塩基配列設計方法では、上記のように所望の標的遺伝子から所定の配列を検索してくるが、RNA干渉を生じさせようとする対象は、標的遺伝子の由来と必ずしも一致せずともよく、類縁種などに適用可能である。例えば、第1の種から単離された遺伝子を標的遺伝子とし、第1の種の類縁種である第2の種に用いる siRNA を設計することもできる。さらに、例えば複数種の哺乳類から共通配列を検索し、この共通配列から上記規定配列を検索して設計することにより、哺乳類に幅広く適用可能な siRNA の設計が可能である。複数の哺乳類に共通する配列は、他の哺乳類においても保存されている確率が高いと考えられるためである。

- 10 本発明の設計方法により、RNA干渉を生じさせるRNA分子を、高い確率でしかも容易に設計することができる。RNAの合成は、未だ労力、時間、費用を要するが、本発明の設計方法によりそれらを大幅に軽減することが可能である。

<3>ポリヌクレオチドの作製方法

- 本発明のポリヌクレオチドの作製方法は、RNA干渉を生じさせる確率の高い
- 15 ポリヌクレオチドを作製する方法である。本発明のポリヌクレオチドは、ポリヌクレオチドの塩基配列が上記本発明の塩基配列設計方法に従って設計され、その配列設計に従うようにポリヌクレオチドが合成される。本発明のポリヌクレオチドには、上述のように、siRNA等の2本鎖ポリヌクレオチド型と、shRNA等の1本鎖ポリヌクレオチド型があるが、以下、2本鎖ポリヌクレオチドを中心に説明する。
- 20

- 配列の設計における好ましい形態は、上記塩基配列設計方法についての説明と同様である。なお、本発明の製造法により製造される2本鎖ポリヌクレオチドはRNAにより構成されることが好ましいが、一部にDNAを含む混成ポリヌクレオチドであってもよい。本明細書では一部にDNAを含むものも siRNA の概念に含める。また、ポリヌクレオチドを構成するRNAおよびDNAは、例えば、糖の尿酸基のメチル化等、化学修飾を施されたものであってもよい。例えば、本明細書における siRNA は、DNA鎖とRNA鎖とのハイブリッド構造を有してもよい。かかるハイブリッド構造は、被導入体に導入した際に標的遺伝子の発現を抑制する活性を有するものであれば構造は特に限定されないが、センス鎖
- 25

がDNAで構成されアンチセンス鎖がRNAで構成された2本鎖ポリヌクレオチドであることが望ましい。

また、本明細書におけるsiRNAは、キメラ構造を有してもよい。キメラ構造とは、1本鎖ポリヌクレオチド中にDNAとRNAとを両方含む構造である。

かかるキメラ構造は、被導入体に導入した際に標的遺伝子の発現を抑制する活性を有するものであれば構造は特に限定されない。本発明者らの研究によれば、siRNAは構造・機能的にアシンメトリー性（非対称性）を有する傾向が認められ、RNA干渉を生じさせるという目的からすると、センス鎖の5'末端側の半分、アンチセンス鎖の3'末端側の半分はRNAで構成されることが望ましい。

ところで、キメラ構造を有するsiRNAでは、被導入体内における安定性や製造コスト等の点から、RNAの含量をできるだけ少なくすることが好ましい。そこで、高い標的遺伝子の発現抑制効果を維持しつつRNA含量を低減可能なsiRNAについて発明者らが鋭意検討したところ、センス鎖の5'末端から9～13ポリヌクレオチドの部分、およびアンチセンス鎖の3'末端から9～13ポリヌクレオチドの部分（例えば、センス鎖およびアンチセンス鎖の前記各末端から11ポリヌクレオチド、好ましくは10ポリヌクレオチド、さらに好ましくは9ポリヌクレオチドの部分）はRNAで構成されることが望ましく、特に、アンチセンス鎖の3'末端側が当該構成を有することが望ましいとの結果が得られた。なお、センス鎖のRNA部分とアンチセンス鎖のRNA部分とは、その位置が必ずしも一致していなくてもよい。

2本鎖ポリヌクレオチドは、一方の鎖が標的遺伝子の塩基配列中に含まれる、

(a)から(d)の規則に従う規定配列と相同な塩基配列の3'末端にオーバーハング部を設けて形成され、他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の3'末端にオーバーハング部を設けて形成される。各鎖の塩基数はオーバーハング部を含め18～24であり、より好ましくは20～22、特に好ましくは21である。また、オーバーハング部の塩基数は2であることが好ましい。全体の塩基数が21、そのうちオーバーハング部が塩基数2で構成されるsiRNAは、哺乳類でも細胞毒性を生じさせずに高確率でRNA干渉を生じさせるsiRNAとして好適である。

RNAの合成は、例えば、化学合成によって合成してもよいし、また、通常のバイオテクノロジー等の手法に従って行うこともでき、所定の配列を有するDNA鎖を作製し、これを鋳型として転写酵素を用いて一本鎖RNAを合成し、一本鎖RNAを2本鎖化するなどの手法により合成することができる。

- 5 なお、分子生物学的な基本的手法については、BASIC METHODS IN MOLECULAR BIOLOGY (1986); Sambrookら、MOLECULAR CLONING: A LABORATORY MANUAL、第2版、Cold Spring Harbor Laboratory Press、Cold Spring Harbor、N. Y. (1989)、細胞工
10 学ハンドブック、黒木登志夫ら編、羊土社 (1992)、新遺伝子工学ハンドブック改訂第3版、村松ら編、羊土社 (1999) など、多くの標準的な実験マニュアルがある。

- 上記本発明の製造方法により得られるポリヌクレオチドとして好ましい形態を示すと、RNA干渉の標的遺伝子の塩基配列中から前記 (a) から (d) の規則
15 に従う塩基数 13 ~ 28 の配列部位を検索し、一方の鎖が、標的遺伝子の塩基配列中に含まれる、前記 (a) から (d) の規則に従う規定配列と相同な塩基配列の 3' 末端にオーバーハング部を設けて形成され、他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の 3' 末端にオーバーハング部を設けて形成され、各鎖の塩基数が 15 ~ 30 であるように合成された、2本鎖ポリヌクレオチドが例
20 示される。当該ポリヌクレオチドは、RNA干渉を生じさせる確率の高いポリヌクレオチドである。

- また、siRNAを発現するような発現ベクターを調製することもできる。規定配列を含む配列を発現するベクターを、発現が行われ得る無細胞系または細胞系の条件下におくことで、発現ベクターを用いて所定の siRNA を供給する
25 ことができる。

従来、siRNAの設計は、試験者の経験や勘に依存していたため、試行錯誤を繰り返すことが多かった。しかし、本発明の2本鎖ポリヌクレオチドの作製方法により、RNA干渉を生じさせる2本鎖ポリヌクレオチドを高い確率で製造することが可能である。上記本発明の検索方法、配列設計方法またはポリヌクレオ

チドの作製方法によれば、RNA干渉を利用した各種の試験や製造等に要する労力、時間、コストを大幅に削減することが可能である。すなわち、本発明は、遺伝子解析、創薬ターゲットの探索、創薬、遺伝子治療、生物種間の差の研究などのRNA干渉を利用する様々な試験、研究、開発、製造等を大幅に簡便にし、効率の向上を図ることができる。

本発明はまた一態様として、上述した本発明のポリペプチドの選択方法も提供する。具体的には、発現を抑制しようとする標的遺伝子の発現系に導入するポリヌクレオチドの選択方法であって、

少なくとも2本鎖領域を有し、

- 10 前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(f)の規則：

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり；

(b) 5'末端の塩基が、グアニンまたはシトシンであり；

- 15 (c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり；

(d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であり、；

(e) 10塩基以上グアニンまたはシトシンが連続する配列を含まず；

(f) 目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と90%以上の相同性を有する配列が含まれない

- 20 に従う規定配列と相同な塩基配列からなり、そして、

前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなるポリヌクレオチドを選択することを特徴とするポリヌクレオチドの選択方法、が提供される。

本発明の選択方法によって得られるポリペプチドの標的となる配列は、前述の

- 25 (a) - (f) の規則を満たす規定配列として、選択された配列である。好ましくは、配列番号47～配列番号817081のいずれであってよい。

本発明の選択方法は、前記選択したポリヌクレオチドから、さらに、前記標的遺伝子の規定配列と相同な塩基配列が、前記標的遺伝子以外の他の遺伝子の塩基配列とのミスマッチ数が少なくとも3塩基であり、かつ、当該少なくとも3塩基

のミスマッチを有する塩基配列を有する他の遺伝子の数が最も少ない配列であるポリヌクレオチドを選択することを含んでもよい。

即ち、当該標的配列が標的遺伝子に高い特異性を有する配列であれば、ポリヌクレオチドが当該標的配列を含む標的遺伝子に対してのみ選択的に発現抑制効果を奏しそれ以外の遺伝子に対しては発現抑制を生じさせない（すなわち、オフターゲット効果がより低い）ので、副作用の影響等を低減できる。したがって、ポリヌクレオチドの標的配列は、標的遺伝子に特異性が高いことがより好ましく、前述の（a）－（f）の規則を満たす規定配列として、選択された配列（例えば、配列番号47～配列番号817081）の中でも、よりオフターゲット効果を低減可能な配列であることが好ましい。好ましい標的遺伝子の規定配列として、他の遺伝子の塩基配列とのミスマッチ数が少なくとも3塩基であり、かつ、少なくとも3塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を選択することができる。「その他の遺伝子の数が最も少ない」とは、「少なくとも3塩基のミスマッチを有する塩基配列を有するその他の遺伝子」、即ち類似する遺伝子、ができるだけ存在しないこと、例えば、好ましくは10個以内、より好ましくは6個以内、さらにより好ましくは1個のみ存在する、あるいは、最も好ましくは全く存在しない、ことを意味する。

例えば、配列番号47～配列番号817081の中から、他の遺伝子の塩基配列とのミスマッチ数が3塩基であり（言い換えれば、19塩基からなる（狭義の）規定配列のうち当該ミスマッチ3塩基以外の16塩基が一致する）、かつ、3塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を選択して得られたのが、図46に示す53998種の配列である。よって、これらの配列のいずれかであることが特に好ましい。

<4>遺伝子の発現抑制方法

本発明の遺伝子発現抑制方法は、所定の塩基配列を検索する工程と、検索された塩基配列に基づいてポリヌクレオチドの塩基配列を設計して合成する工程と、得られたポリヌクレオチドを標的遺伝子を含む発現系に導入する工程とを含む。

所定の塩基配列を検索する工程は、上記RNA干渉の標的塩基配列検索方法に従う。好ましい態様も上記の通りである。また、検索された塩基配列に基づいて

s i R N A の塩基配列を設計して合成する工程は、上記、RNA干渉を生じさせるポリヌクレオチドの塩基配列設計方法、ポリヌクレオチドの作製方法に従って行うことができ、好ましい形態も同様である。

得られたポリヌクレオチドは、標的遺伝子の発現系に添加して標的遺伝子の発
5 現を抑制する。標的遺伝子の発現系とは、標的遺伝子が発現している体系のこと
であり、より具体的には、少なくとも標的遺伝子のmRNAが形成される反応系
を備える系である。標的遺伝子の発現系としては、In v i t r o、In v
i v oのいずれも含まれる。標的遺伝子の発現系として、培養細胞、培養組織、
10 生体などのほか、無細胞系で用いることも可能である。発現抑制をしようとする
標的遺伝子（抑制標的遺伝子）は必ずしも検索された配列の由来と一致する生物
種のものに限らずともよいが、検索対象遺伝子と抑制対象遺伝子の由来が近縁で
あればあるほど、特異的かつ効果的に特定遺伝子の抑制を行うことができる。

標的遺伝子の発現系に導入するとは、標的遺伝子の発現反応系の中に取り込ま
せるということである。具体的に例を挙げると、標的遺伝子を有する培養細胞に
15 2本鎖ポリヌクレオチドをトランスフェクトし、細胞内に取り込ませる、規定配
列およびオーバーハング部からなる塩基配列を有する発現ベクターを作製し、標
的遺伝子を有する細胞内に導入する（WO 0 1 / 3 6 6 4 6、WO 0 1 / 4 9 8
4 4）などの手法が挙げられる。

本発明の遺伝子抑制方法によれば、効率よくRNA干渉を生じさせるポリヌク
20 レオチドを得られるため、効率よく、また簡便に遺伝子を抑制することが可能で
ある。したがって、例えば、対象遺伝子が疾患関連遺伝子の場合、当該疾患関連
遺伝子を標的とするs i R N A（またはs h R N A）や、このようなs i R N A
（またはs h R N A）を発現するベクターを、疾患関連遺伝子発現細胞へ導入す
ることにより、疾患関連遺伝子を不活性化することができる。

25 本明細書において後述する実施例2-5では、ヒトビメンチン、ルシフェラー
ゼ、SARSウイルス等の遺伝子に対する本発明のポリヌクレオチドのRNA i
効果を、mRNAの対照に対する相対的発現量で調べた。図31、32および3
5は、mRNAの発現量を定量PCRで測定した結果が示されている。mRNA
の相対発現量は図31、32および35において各々、約7-8%（実施例2、

図31)、約12-13% (実施例3、図32)、数%ないし約15%未満 (実施例5、図35)と減少し、各遺伝子の発現抑制効果が確認された。また実施例4の図34は、RNAi効果としてのmRNAの発現量をルシフェラーゼ活性で調べた結果であるが、同様に、対照と比較して数%ないし約20%未満に減少した。

さらに、実施例8では、関連疾患や生物学的機能が明らかとなった図46に示す遺伝子のうち、無作為に選択した約300種の遺伝子について、ヒト由来HeLa細胞でのmRNAの発現量を相対的発現量で調べた。表1で示したように、当該遺伝子の発現抑制効果、すなわちRNAi効果を評価するために算出した後述のRQ値は、全て1未満であり、ほぼ全てが0.5未満であった。

本発明の遺伝子発現抑制方法において、「標的遺伝子の発現を抑制する」とは、標的遺伝子のmRNA発現量が実質的に減少することを意味する。mRNA発現量が実質的に減少していれば、その変化の幅の大小にかかわらず、発現抑制が実現されている。特に、当該減少量が大きいほど発現抑制の効果が大きいことから、限定されるわけではないが、好ましくは約80%以下、より好ましくは約50%以下、さらにより好ましくは約20%以下、さらにまた好ましくは約15%以下、さらに好ましくは約8%以下に減少する場合を発現抑制の判定基準としてもよい。本発明の規則に従って選択されたポリヌクレオチドを用いる本発明の遺伝子抑制方法によれば、標的遺伝子のmRNA発現量を好ましくは少なくとも50%以下に減少させることが可能となる。

<5> siRNA配列設計プログラム

以下、siRNA配列設計プログラムの実施形態例を説明する。

(5-1) プログラムの概要

本プログラムは、ゲノムのシーケンスが進んでいない種、たとえばウマ、ブタなどに対してRNA干渉を行う際に、既に公開されているヒトとマウスのホモログの配列情報をもとに、目的の種で使用可能なsiRNAの配列を計算するのである。本プログラムでsiRNAを設計すれば、標的遺伝子をシーケンスすることなく迅速にRNA干渉を行うことができる。siRNAの設計(計算)にあたっては、GまたはC配分の規則(上記(a)~(d)で示される規則)を考慮してRNAi活性を有する確率が高い配列を選ぶとともに、標的遺伝子とは

無関係の遺伝子に対してRNA干渉が起こらないようホモロジーサーチによるチェックを行っている。なお、本明細書において「GまたはC」を「G/C」と、「AまたはT」を「A/T」とそれぞれ表記する場合がある。また、「A/T(U)」とは、デオキシリボ核酸による配列の場合T(チミン)であり、リボ核酸による

5 配列の場合U(ウラシル)であることを示す。

(5-2) siRNA設計の方針

ヒトの遺伝子Xおよび、そのホモログであるマウスの遺伝子Xの配列が既知であるとすると。本プログラムはそれらの配列を読み込み、コード領域(CDS)部分から23塩基以上の完全に共通な配列を探し出す。この共通部分からsiRNAを設計すれば、そのsiRNAはヒトとマウスの遺伝子Xをとともに標的とすることが

10 できる(図1)。

ヒトとマウスとで完全に共通な部分は、他の哺乳類でも保存されている確率が高いと考えられるので、上記のsiRNAはヒトとマウスの遺伝子Xのみならず、他の哺乳類の遺伝子Xに対しても機能することが期待される。つまり、標的遺伝子

15 子の配列が未知の動物種であっても、対応するヒトとマウスのホモログについて配列情報が既知であれば、本プログラムを用いてsiRNAを設計することができる。

なお、哺乳類においては、実際に機能するsiRNAは配列に規則性があることが判っている(図2)。本プログラムでは、その規則に適合した配列のみを選ぶようにした。図2は、RNAi効果を示すsiRNAの配列の規則性(sirNAのG/C配分の規則)を示す図である。図2において、21塩基の長さをもつ2本のRNA鎖が、それぞれ3'側に2塩基のオーバーハングを持つように5'側の19塩基どうして塩基対を形成しているようなsiRNAで、塩基対を形成している19塩基のうちコーディング側の配列の、1)3'末端がA/Uであること、

20 2)5'末端がG/Cであること、3)3'側の7文字は、A/Uの割合が高いこと、が求められる。特に、1)および2)の条件は重要である。

25

(5-3) プログラムの構造

本プログラムは3つの部分から構成されている。すなわち、(5-3-1)ヒトとマウスとで共通部位の配列(部分配列)を検索する部分、(5-3-2)G/C

配分の規則に基づいて配列にスコアをつける部分、(5-3-3)無関係の遺伝子を標的にしないようホモロジーサーチによりチェックする部分、である。

(5-3-1) 共通配列を検索する部分

複数の塩基配列ファイル (file 1, file 2, file 3,...) を読み込み、全ファイルに共通に出現する23文字の配列をすべて見いだす。

(計算例)

file 1としてヒトの遺伝子FBP1 (NM_000507:Homo sapiens fructose-1, 6-bisphosphatase 1)、file 2としてマウスの遺伝子Fbp1 (NM_019395:Mus musculus fructose bisphosphatase 1)の配列をプログラムに入力した。その結果、両者の配列(図3)から両者に共通な23文字の配列(ヒトFBP1とマウスFbp1に共通な配列)が15個見いだされた(図4)。

(5-3-2) 配列にスコアをつける部分

前述のG/C配分の規則に適合した配列のみを選択するために、23文字の配列に対してスコアを付ける。

(方法)

23文字の配列に対して、以下のようにスコアを付ける。

スコア1: 先頭から21文字目がA/Uか。[no=0, yes=1]

スコア2: 先頭から3文字目がG/Cか。[no=0, yes=1]

スコア3: 先頭から15文字目から21文字目までの7文字のうち、A/Uの数。[0-7]

総合スコア: スコア1~3の積。ただし積が3以下の場合は0とする。

(計算例) 図4に示した15個の配列に対して計算を行った結果を、図5に示す。図5は、ヒトFBP1とマウスFbp1に共通な配列にスコアを付した図である。なお、図5に示す配列の後には、スコア1、スコア2、スコア3、総合スコアが順に記載されている。

(5-3-3) 無関係の遺伝子を標的にしないようチェックする部分

設計したsiRNAが、標的遺伝子とは無関係の遺伝子に対して機能しないよ

う、公開されているヒト・マウスの全mRNAに対してホモロジーサーチを行い、無関係の遺伝子がヒットする度合いを評価する。ホモロジーサーチには各種アルゴリズムが使用可能であるが、ここでは、BLASTを使用した例を示す。なお、BLASTを用いる場合は、検索配列が23塩基と短いことを考慮して、Word Sizeを十分に小さくすることが望ましい。

BLASTの結果、E valueが10.0以下のヒットのうち、標的遺伝子以外の全てのヒットについて、E valueの逆数の総和を求める（以下、この値をホモロジー・スコアと呼ぶ）。すなわち、ホモロジー・スコア（X）は、下記式により求められる。

$$X = \sum_{all\ hits} \frac{1}{E}$$

注意点：E valueが低いヒットほど、queryの23文字とホモロジーが高く、siRNAの標的とされる危険性が高い。また、ヒットの数が多いほど、より多くの無関係な遺伝子を標的にする確率が高い。この2点を考慮して、siRNAが標的遺伝子と無関係の遺伝子を標的にする危険性を、上の式を用いて評価している。

（計算例）

23文字の配列に対して、上記のホモロジーサーチを行った結果と、ホモロジー・スコアを示す（図6、図7）。なお、図6には、ヒトFBP1とマウスFbp1に共通な配列「caccctgaccgcttcgtcatgg」をBLASTした結果が示されており、最初の2行は、マウスFbp1とヒトFBP1がヒットしたものである。ホモロジー・スコアは5.9で、ヒットが少ない例である。この配列のsiRNAは、他の遺伝子を標的にする危険性が低い。また、図7には、ヒトFBP1とマウスFbp1に共通な配列「gcccttctgagaggatgctctgc」をBLASTした結果が示されている。ヒットが多い例で、ホモロジー・スコアは170.8である。他の遺伝子を標的にする危険

性が高いため、s i R N Aとして適さない。

実際には、上記の(5-3-1)、(5-3-2)、(5-3-3)の部分は一体として構成してもよく、図3に示したヒトとマウスの配列を入力すると、図8のような出力が直接得られる。ここで、図8に示す配列の後には、スコア1、スコア2、スコア3、総合スコア、および、ホモロジー・スコアを10倍した値が順に記載されている。なお、処理時間短縮のため、総合スコアが0の配列はホモロジー・スコアを計算しないようにしてもよい。この結果から、s i R N Aとして「36 c a c c c t g a c c c g c t t c g t c a t g g」の部分を使えばよいことがわかる。また、(5-3-1)、(5-3-2)、(5-3-3)の部分のうち1つの機能を単独で利用することもできる。

(5-4) 実際の計算

ヒト・マウス間のホモログのうち約6400遺伝子のペアに対して、実際に本プログラムでs i R N Aの設計をおこなった。その結果、約7割について、ヒトとマウスとに共通な配列で、かつ有効なs i R N Aの配列規則性の規則を満たし、無関係な遺伝子を標的としないようなs i R N Aが設計できた。

これらのs i R N Aはヒトとマウスのみならず、多岐の哺乳類で効果的に標的遺伝子を抑える効果があると期待され、家畜や愛玩動物などへの応用など産業的価値が高いと考えられる。また本プログラムを用い、同種内の複数の遺伝子、たとえばe I F 2 C 1とe I F 2 C 2を同時に標的とするs i R N Aを設計することも可能であり、本プログラムが提供するs i R N A設計の手法は、応用範囲が広くきわめて強力なものである。さらに、ヒトとマウスの共通な部分の配列を用いてP C Rプライマーを設計すれば、多岐の哺乳類で目的の遺伝子を増幅できる、といった利用法もある。

なお、s i R N A配列設計プログラムを実行する装置の実施の形態は、下記<7>s i R N A配列設計プログラムを実行する塩基配列処理装置等の欄に詳細に示す。

<6> s i R N A配列設計ビジネスモデルシステム

本発明のs i R N A配列設計ビジネスモデルシステムは、s i R N A配列設計プログラムを適用するにあたり、ゲノムデータベース、E S Tデータベース、進

化系統樹データベースを本プログラムのロジックに添って単独で或いは組み合わせて参照し、遺伝子配列情報の `available` 状態に応じた効果的な `siRNA` を顧客へ提案するというシステムである。 `available` 状態とは、情報が利用可能な状態であることをいう。

5 (1) ゲノム情報が `available` だが ORF の特定が困難なものについては、EST 情報、等を基にエクソン想定部位に対して効果的な `siRNA` 候補を抽出し、スプライシングバリエーションを考慮した `siRNA` 配列とその評価結果を表示する。

10 (2) 遺伝子配列、遺伝子名が明らかなものは、遺伝子配列または遺伝子名を入力後、効果的な `siRNA` 候補を抽出し、`siRNA` 配列とその評価結果を表示する。

(3) ゲノム情報が `available` でないものについては、同種の遺伝子機能を保存している類縁関係（同属、乃至は起源を同じとする）にある生物種の遺伝子配列、或いは進化系統樹的に挟まれた、ゲノム配列が `available`
15 な 2 種類以上の生物種の遺伝子配列、を用いて効果的な `siRNA` 候補を抽出し、`siRNA` 配列とその評価結果を表示する。

(4) 感染症の遺伝子機能解析、創薬ターゲット発掘には、微生物のゲノムデータベース・進化系統樹データベースへ更に微生物のアポトーシス誘導部位情報、機能発現部位情報を組み合わせて網羅的な `siRNA` 候補配列を求める手法が有
20 効である。

<7> `siRNA` 配列設計プログラムを実行する塩基配列処理装置等

以下、上述した `siRNA` 配列設計プログラムを実行する装置である、本発明にかかる塩基配列処理装置、塩基配列処理方法をコンピュータに実行させるプログラム、記録媒体、および、塩基配列処理システムの実施の形態を図面に基づいて詳細に説明する。なお、この実施の形態によりこの発明が限定されるものではない。
25

【発明の概要】

以下、本発明の概要について説明し、その後、本発明の構成および処理等について詳細に説明する。図 1 2 は、本発明の基本原理解を示す原理構成図である。

本発明は、概略的に、以下の基本的特徴を有する。すなわち、本発明は、RNA干渉の標的遺伝子の塩基配列情報を取得して、塩基配列情報の予め定めた塩基数の配列部位である部分塩基配列情報を作成する（ステップS-1）。

ここで、ステップS-1において、塩基配列情報の標的遺伝子のコード領域、

- 5 または、転写領域に対応する部位から、予め定めた塩基数の部分塩基配列情報を作成してもよい。また、異なる生物に由来する複数の塩基配列情報（例えば、ヒトの塩基配列情報およびマウスの塩基配列情報など）の間で共通する、予め定めた塩基数の部分塩基配列情報を作成してもよい。また、同じ生物種における類似する複数の塩基配列情報の間で共通する、予め定めた塩基数の共通な部分塩基配
- 10 列情報を作成してもよい。また、異なる生物に由来する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。また、同じ生物種における類似する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。これにより、標的遺伝子に特異的にRNA干渉を生じさせる規定配列を効率よく選
- 15 択することができ、計算負荷を軽減できる。

- さらに、ステップS-1において、オーバーハング部位を含む部分塩基配列情報を作成してもよい。具体的には、例えば、オーバーハング部位が含まれていることを表すオーバーハング部位含有情報が付加された部分塩基配列情報を作成し
- 20 てもよい。すなわち、部分塩基配列情報とオーバーハング部位含有情報とを相互に関連付けてもよい。これにより、最初から規定配列およびオーバーハング部位を含めて選択を行い、設計することができるようになる。

- なお、上述の予め定めた塩基数の上限は、オーバーハング部位を含まない場合は、好ましくは28以下、より好ましくは22以下、さらに好ましくは20以下
- 25 であり、オーバーハング部位を含む場合は、好ましくは32以下、より好ましくは26以下、さらに好ましくは24以下である。また、予め定めた塩基数の下限は、オーバーハング部位を含まない場合は、好ましくは13以上、より好ましくは16以上、さらに好ましくは18以上であり、オーバーハング部位を含む場合は、好ましくは17以上、より好ましくは20以上、さらに好ましくは22以上

である。そして、最も好ましい予め定めた塩基数は、オーバーハング部位を含まない場合は、19であり、オーバーハング部位を含む場合は、23である。これにより、哺乳類においても細胞毒性を生じさせずにRNA干渉を生じさせる規定配列を効率よく選択することができる。

5 ついで、ステップS-1にて作成された部分塩基配列情報の3'末端の塩基がアデニン、チミン、または、ウラシルであるか否かを判定する（ステップS-2）。なお、具体的には、例えば、3'末端の塩基がアデニン、チミン、または、ウラシルであるときには「1」を、そうでないときには「0」を判定結果として出力してもよい。

10 ついで、ステップS-1にて作成された部分塩基配列情報の5'末端の塩基がグアニン、または、シトシンであるか否かを判定する（ステップS-3）。なお、具体的には、例えば、5'末端の塩基がグアニン、または、シトシンであるときには「1」を、そうでないときには「0」を判定結果として出力してもよい。

ついで、ステップS-1にて作成された部分塩基配列情報の3'末端の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ば
15 ばれる1種または2種以上の塩基がリッチな塩基配列情報であるか否かを判定する（ステップS-4）。なお、具体的には、例えば、部分塩基配列情報の3'末端の7塩基からなる塩基配列情報に含まれる、アデニン、チミン、および、ウラシルからなる群より選ば
20 れる1種または2種以上の塩基の数を判定結果として出力してもよい。ステップS-4における判定の規則は、ステップS-1にて作成された部分塩基配列情報の3'末端近傍の塩基配列情報がアデニン、チミン、および、ウラシルからなる群より選ば
れる1種または2種以上の塩基がリッチな塩基配列情報であることを規定しており、具体的に検索を行う際の一指標として3'末端から7塩基の範囲内の塩基配列情報がアデニン、チミン、および、ウラシルから
25 なる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であることを規定している。

ここで、ステップS-4において、「リッチな塩基配列情報」は、上述の<1> RNA干渉の標的塩基配列検索方法に記述されている「リッチな配列」であり、具体的には、例えば、ステップS-1にて作成された部分塩基配列情報が19塩

基程度からなる場合、当該部分塩基配列情報の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基が少なくとも好ましくは3塩基以上、より好ましくは4塩基以上、特に好ましくは5塩基以上含まれる塩基配列情報である。

- 5 また、ステップS-2からステップS-4において、オーバーハング部位を含む部分塩基配列情報を判定する場合、部分塩基配列情報のオーバーハング部位を除いた配列部位を判定対象として判定する。

- ついで、ステップS-2、ステップS-3、および、ステップS-4にて判定された結果に基づいて、ステップS-1にて作成された部分塩基配列情報から標的遺伝子に特異的にRNA干渉を生じさせる規定配列情報を選択する（ステップS-5）。
- 10

- 具体的には、例えば、ステップS-2にて3'末端の塩基がアデニン、チミン、または、ウラシルであると判定され、ステップS-3にて5'末端の塩基がグアニン、または、シトシンであると判定され、かつ、ステップS-4にて部分塩基配列情報の3'末端の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であると判定された部分塩基配列情報を規定配列情報として選択する。ここで、具体的には、例えば、ステップS-2、ステップS-3、および、ステップS-4にて出力される数値の積を算出し、当該積の値に基づいて、ステップS-1にて作成された部分塩基配列情報から規定配列情報を選択してもよい。
- 15
- 20

これにより、哺乳類などにおいて、RNA干渉を生じさせる確率が極めて高い、つまりRNA干渉に有効なsiRNAの配列を効率よく、容易に作成することができる。

- ここで、ステップS-5にて選択された規定配列情報の少なくとも一方の末端にオーバーハング部位を付加してもよい。なお、例えば、ターゲット側を検索する場合は、規定配列情報の両末端にオーバーハング部位を付加してもよい。これにより、RNA干渉を生じさせるポリヌクレオチドの設計を簡便化することができる。
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なお、上述のオーバーハング部位の塩基数は、上述の<2>RNA干渉を生じ

させるポリヌクレオチドの塩基配列設計方法に記述されている塩基数であり、具体的には、例えば、2が特に好適である。

また、ステップS-5にて選択された規定配列情報と同一または類似の塩基配列情報を、他の塩基配列情報（例えばNCBIのRefSeq（Reference Sequence project）などの公的データベースで公開されている塩基配列情報）から、例えばBLAST、FASTA、sssearchなどの既存のホモロジー検索手法を用いて検索し、検索された同一または類似の塩基配列情報に基づいて、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価してもよい。

具体的には、例えば、ステップS-5にて選択された規定配列情報と同一または類似の塩基配列情報を、他の塩基配列情報（例えばNCBIのRefSeqなどの公的データベースで公開されている塩基配列情報）から、例えばBLAST、FASTA、sssearchなどの既存のホモロジー検索手法を用いて検索し、検索された同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付された同一類似の度合いを示す値（例えばBLAST、FASTAおよびsssearchの場合は、「E value」）に基づいて、同一類似の度合いを示す値の逆数の総和を算出し、算出された総和に基づいて（例えば、算出された総和の大小などに基づいて）、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価してもよい。

これにより、規定配列情報から、標的とする遺伝子のみに特異的にRNA干渉を生じさせる配列を選出することができる。

以上、本発明により選択された、標的遺伝子と関係のない遺伝子についてまでRNA干渉を生じさせない規定配列情報に基づいてRNAの合成を行えば、それにかかる労力、時間、費用を従来に比べ大幅に軽減することができる。

〔システム構成〕

まず、本システムの構成について説明する。図13は、本発明が適用される本システムの構成の一例を示すブロック図であり、該構成のうち本発明に係る部分のみを概念的に示している。

本システムは、概略的に、RNA干渉の標的遺伝子の塩基配列情報を処理する塩基配列処理装置100と、配列情報や構造情報等に関する外部データベースやホモロジー検索等の外部プログラム等を提供する外部システム200とを、ネットワーク300を介して通信可能に接続して構成されている。

- 5 図13において、ネットワーク300は、塩基配列処理装置100と外部システム200とを相互に接続する機能を有し、例えば、インターネット等である。

図13において、外部システム200は、ネットワーク300を介して、塩基配列処理装置100と相互に接続され、利用者に対して配列情報や構造情報等に関する外部データベースやホモロジー検索やモチーフ検索等の外部プログラムを
10 実行するウェブサイトを提供する機能を有する。

ここで、外部システム200は、WEBサーバやASPサーバ等として構成してもよく、そのハードウェア構成は、一般に市販されるワークステーション、パーソナルコンピュータ等の情報処理装置およびその付属装置により構成してもよい。また、外部システム200の各機能は、外部システム200のハードウェア
15 構成中のCPU、ディスク装置、メモリ装置、入力装置、出力装置、通信制御装置等およびそれらを制御するプログラム等により実現される。

図13において塩基配列処理装置100は、概略的に、塩基配列処理装置100の全体を統括的に制御するCPU等の制御部102、通信回線等に接続されるルータ等の通信装置（図示せず）に接続される通信制御インターフェース部104、入力装置112や出力装置114に接続される入出力制御インターフェース部108、および、各種のデータベースやテーブルなどを格納する記憶部106を備えて構成されており、これら各部は任意の通信路を介して通信可能に接続されている。さらに、この塩基配列処理装置100は、ルータ等の通信装置および専用線等の有線または無線の通信回線を介して、ネットワーク300に通信可能
20 に接続されている。

記憶部106に格納される各種のデータベースやテーブル（標的遺伝子塩基配列ファイル106a～標的遺伝子アノテーションデータベース106h）は、固定ディスク装置等のストレージ手段であり、各種処理に用いる各種のプログラムやテーブルやファイルやデータベースやウェブページ用ファイル等を格納する。

これら記憶部106の各構成要素のうち、標的遺伝子塩基配列ファイル106aは、RNA干渉の標的遺伝子の塩基配列情報を格納する標的遺伝子塩基配列格納手段である。図14は、標的遺伝子塩基配列ファイル106aに格納される情報の一例を示す図である。

- 5 標的遺伝子塩基配列ファイル106aに格納される情報は、図14に示すように、RNA干渉の標的遺伝子の塩基配列情報を一意に識別する塩基配列識別情報（例えば、図14の「NM_000507」）と、塩基配列情報（例えば、図14の「ATGGCTGA...AGTGA」）とを相互に関連付けて構成されている。

- 10 また、部分塩基配列ファイル106bは、RNA干渉の標的遺伝子の塩基配列情報の予め定めた塩基数の配列部位である部分塩基配列情報を格納する部分塩基配列格納手段である。図15は、部分塩基配列ファイル106bに格納される情報の一例を示す図である。

- 部分塩基配列ファイル106bに格納される情報は、図15に示すように、部分塩基配列情報を一意に識別する部分塩基配列識別情報（例えば、図15の「NM_000507:36」）と、部分塩基配列情報（例えば、図15の「caccct...tcattgg」）と、オーバーハング部位が含まれていることを表すオーバーハング部位含有情報（例えば、図15の「含有」）とを相互に関連付けて構成されている。

- 20 また、判定結果ファイル106cは、後述する3'末端塩基判定部102b、5'末端塩基判定部102c、および、特定塩基含有判定部102dにて判定された結果を格納する判定結果手段である。図16は、判定結果ファイル106cに格納される情報の一例を示す図である。

- 判定結果ファイル106cに格納される情報は、図16に示すように、部分塩基配列識別情報（例えば、図16の「NM_000507:36」）と、3'末端塩基判定部102bにて判定された結果である3'末端塩基判定結果（例えば、図16の「1」）と、5'末端塩基判定部102cにて判定された結果である5'末端塩基判定結果（例えば、図16の「1」）と、特定塩基含有判定部102dにて判定された結果である特定塩基含有判定結果（例えば、図16の「4」）と、3'末端塩基判定部102b、5'末端塩基判定部102c、および、特定塩基含有判定

部 1 0 2 d にて判定された結果を総合した結果である総合判定結果（例えば、図 1 6 の「4」）とを相互に関連付けて構成されている。

5 なお、図 1 6 において、3' 末端塩基判定結果および 5' 末端塩基判定結果は、3' 末端塩基判定部 1 0 2 b、5' 末端塩基判定部 1 0 2 c のそれぞれにて「含む」と判定された場合「1」を設定し、「含まない」と判定された場合「0」を設定した
10 場合の一例である。また、図 1 6 において、特定塩基含有判定結果は、部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報に含まれる、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基の数を
15 設定した場合の一例である。さらに、図 1 6 において、総合判定結果は、3' 末端塩基判定結果、5' 末端塩基判定結果、および、特定塩基含有判定結果の積を設定した場合の一例である。なお、具体的には、例えば、当該積が 3 以下の場合には、
20 「0」を設定してもよい。

また、規定配列ファイル 1 0 6 d は、標的遺伝子に特異的に RNA 干渉を生じさせる部分塩基配列情報である規定配列情報を格納する規定配列格納手段である。
25 図 1 7 は、規定配列ファイル 1 0 6 d に格納される情報の一例を示す図である。

規定配列ファイル 1 0 6 d に格納される情報は、図 1 7 に示すように、部分塩基配列識別情報（例えば、図 1 7 の「NM_000507:36」）と、標的遺伝子に特異的に RNA 干渉を生じさせる部分塩基配列情報である規定配列情報（例えば、図 1 7 の「c a c c c t . . . t c a t g g」）とを相互に関連付けて構成
30 されている。

また、参照配列データベース 1 0 6 e は、後述する同一類似塩基配列検索部 1 0 2 g にて規定配列情報と同一または類似の塩基配列情報を検索するために参照する塩基配列情報である参照塩基配列情報を格納するデータベースである。なお、
35 参照配列データベース 1 0 6 e は、インターネットを経由してアクセスする外部の塩基配列情報データベースであってもよく、また、これらのデータベースをコピーしたり、オリジナルの配列情報を格納したり、さらに独自のアノテーション情報等を付加したりして作成したインハウスデータベースであってもよい。図 1 8 は、参照配列データベース 1 0 6 e に格納される情報の一例を示す図である。

参照配列データベース106eに格納される情報は、図18に示すように、参照配列識別情報（例えば、図18の「ref|NM_015820.1|」）と、参照塩基配列情報（例えば、図18の「caccct...gcatgg」）とを相互に関連付けて構成されている。

- 5 また、同一類似度ファイル106fは、後述する同一類似塩基配列検索部102gにて検索された同一または類似の塩基配列情報に付された同一類似の度合いを示す値である同一類似度を格納する同一類似度格納手段である。図19は、同一類似度ファイル106fに格納される情報の一例を示す図である。

- 10 同一類似度ファイル106fに格納される情報は、図19に示すように、部分塩基配列識別情報（例えば、図19の「NM_000507:36」）と、参照配列識別情報（例えば、図19の「ref|NM_015820.1|」および「ref|NM_003837.1|」）と、同一類似度（例えば、図19の「0.52」）とを相互に関連付けて構成されている。

- 15 また、評価結果ファイル106gは、後述する無関係遺伝子標的評価部102hにて標的遺伝子とは無関係の遺伝子を標的にするか否かを評価した結果を格納する評価結果格納手段である。図20は、評価結果ファイル106gに格納される情報の一例を示す図である。

- 20 評価結果ファイル106gに格納される情報は、図20に示すように、部分塩基配列識別情報（例えば、図20の「NM_000507:36」および「NM_000507:441」）と、後述する総和算出部102mにて算出された総和（例えば、図20の「5.9」および「170.8」）と、評価結果（例えば、図20の「非標的」および「標的」）とを相互に関連付けて構成されている。なお、図20において、「非標的」は、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にしないことを意味し、また、「標的」は、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にすることを意味する。

25 また、標的遺伝子アノテーションデータベース106hは、標的遺伝子に関するアノテーション情報を格納する標的遺伝子アノテーション格納手段である。なお、標的遺伝子アノテーションデータベース106hは、インターネットを経由してアクセスする、遺伝子に関するアノテーション情報を格納する外部のアノテ

ーションデータベースであってもよく、また、これらのデータベースをコピーしたり、オリジナルの配列情報を格納したり、さらに独自のアノテーション情報等を付加したりして作成したインハウスデータベースであってもよい。

標的遺伝子アノテーションデータベース106hに格納される情報は、標的遺伝子を識別する標的遺伝子識別情報（例えば標的遺伝子の遺伝子名、アクセッション（Accession）番号など（例えば、図3の最上部に記載の「NM_000507」、「FBP1」）と標的遺伝子に関する簡略的な情報（例えば図3の最上部に記載の「Homo sapiens fructose-1, 6-bisphosphatase 1」）とを相互に関連付けて構成されている。

また、図13において、通信制御インターフェース部104は、塩基配列処理装置100とネットワーク300（またはルータ等の通信装置）との間における通信制御を行う。すなわち、通信制御インターフェース部104は、他の端末と通信回線を介してデータを通信する機能を有する。

また、図13において、入出力制御インターフェース部108は、入力装置112や出力装置114の制御を行う。ここで、出力装置114としては、モニタ（家庭用テレビを含む）の他、スピーカを用いることができる（なお、以下においては出力装置114をモニタとして記載する場合がある）。また、入力装置112としては、キーボード、マウス、および、マイク等を用いることができる。また、モニタも、マウスと協働してポインティングデバイス機能を実現する。

また、図13において、制御部102は、OS（Operating System）等の制御プログラム、各種の処理手順等を規定したプログラム、および所要データを格納するための内部メモリを有し、これらのプログラム等により、種々の処理を実行するための情報処理を行う。制御部102は、機能概念的に、部分塩基配列作成部102a、3'末端塩基判定部102b、5'末端塩基判定部102c、特定塩基含有判定部102d、規定配列選択部102e、オーバーハング部位付加部102f、同一類似塩基配列検索部102g、および、無関係遺伝子標的評価部102hを備えて構成されている。

このうち、部分塩基配列作成部102aは、RNA干涉の標的遺伝子の塩基配列情報を取得して、塩基配列情報の予め定めた塩基数の配列部位である部分塩基

配列情報を作成する部分塩基配列作成手段である。ここで、部分塩基配列作成部 102a は、図 21 に示すように、領域指定塩基配列作成部 102i、共通塩基配列作成部 102j、および、オーバーハング部位含有塩基配列作成部 102k をさらに含んで構成される。

- 5 図 21 は、本発明が適用される本システムの部分塩基配列作成部 102a の構成の一例を示すブロック図であり、該構成のうち本発明に関係する部分のみを概念的に示している。

図 21 において、領域指定塩基配列作成部 102i は、塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の
10 部分塩基配列情報を作成する領域指定塩基配列作成手段である。

また、共通塩基配列作成部 102j は、異なる生物に由来する複数の塩基配列情報の間で共通する、予め定めた塩基数の部分塩基配列情報を作成する共通塩基配列作成手段である。

また、オーバーハング部位含有塩基配列作成部 102k は、オーバーハング部位を含む部分塩基配列情報を作成するオーバーハング部位含有塩基配列作成手段
15 である。

再び図 13 に戻り、3' 末端塩基判定部 102b は、部分塩基配列情報の 3' 末端の塩基がアデニン、チミン、または、ウラシルであるか否かを判定する 3' 末端塩基判定手段である。

20 また、5' 末端塩基判定部 102c は、部分塩基配列情報の 5' 末端の塩基がグアニン、または、シトシンであるか否かを判定する 5' 末端塩基判定手段である。

また、特定塩基含有判定部 102d は、部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選
25 ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であるか否かを判定する特定塩基含有判定手段である。

また、規定配列選択部 102e は、3' 末端塩基判定部 102b、5' 末端塩基判定部 102c、および、特定塩基含有判定部 102d にて判定された結果に基づいて、部分塩基配列情報から標的遺伝子に特異的に RNA 干渉を生じさせる規定配列情報を選択する規定配列選択手段である。

また、オーバーハング部位付加部 1 0 2 f は、規定配列情報の少なくとも一方の末端にオーバーハング部位を付加するオーバーハング部位付加手段である。

また、同一類似塩基配列検索部 1 0 2 g は、規定配列情報と同一または類似の塩基配列情報を他の塩基配列情報から検索する同一類似塩基配列検索手段である。

また、無関係遺伝子標的評価部 1 0 2 h は、同一または類似の塩基配列情報に基づいて、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価する無関係遺伝子標的評価手段である。ここで、無関係遺伝子標的評価部 1 0 2 h は、図 2 2 に示すように、総和算出部 1 0 2 m、および、総和基準評価部 1 0 2 n をさらに含んで構成される。

図 2 2 は、本発明が適用される本システムの無関係遺伝子標的評価部 1 0 2 h の構成の一例を示すブロック図であり、該構成のうち本発明に関係する部分のみを概念的に示している。

図 2 2 において、総和算出部 1 0 2 m は、同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付された同一類似の度合いを示す値（同一類似度）に基づいて、同一類似の度合いを示す値の逆数の総和を算出する総和算出手段である。

また、総和基準評価部 1 0 2 n は、総和算出部 1 0 2 m にて算出された総和に基づいて、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価する総和基準標的評価手段である。

なお、これら各部によって行なわれる処理の詳細については、後述する。

[システムの処理]

次に、このように構成された本実施の形態における本システムの処理の一例について、以下に図 2 3、および、図 2 4 を参照して詳細に説明する。

[メイン処理]

まず、メイン処理の詳細について図 2 3 等を参照して説明する。図 2 3 は、本実施形態における本システムのメイン処理の一例を示すフローチャートである。

まず、塩基配列処理装置 1 0 0 は、部分塩基配列作成部 1 0 2 a にて行われる

部分塩基配列作成処理により、RNA干渉の標的遺伝子の塩基配列情報を取得して標的遺伝子塩基配列ファイル106aの所定の記憶領域に格納し、塩基配列情報の予め定めた塩基数の配列部位である部分塩基配列情報を作成し、作成された部分塩基配列情報を部分塩基配列ファイル106bの所定の記憶領域に格納する
5 (ステップSA-1)。

ここで、ステップSA-1において、部分塩基配列作成部102aは、領域指定塩基配列作成部102iの処理により、塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の部分塩基配列情報を作成し、作成された部分塩基配列情報を部分塩基配列ファイル106bの所定の記憶領域に格納してもよい。
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また、ステップSA-1において、部分塩基配列作成部102aは、共通塩基配列作成部102jの処理により、異なる生物に由来する複数の塩基配列情報(例えば、ヒトの塩基配列情報およびマウスの塩基配列情報など)の間で共通する、予め定めた塩基数の部分塩基配列情報を作成し、作成された部分塩基配列情報を
15 部分塩基配列ファイル106bの所定の記憶領域に格納してもよい。なお、同じ生物種における類似する複数の塩基配列情報の間で共通する、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。

また、ステップSA-1において、部分塩基配列作成部102aは、領域指定塩基配列作成部102i、および、共通塩基配列作成部102jの処理により、
20 異なる生物に由来する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成し、作成された部分塩基配列情報を部分塩基配列ファイル106bの所定の記憶領域に格納してもよい。なお、同じ生物種における類似する複数の塩基配列情報の標的遺伝子のコード領域、または、転写領域に対応する部位から、予め定めた塩基数の共通な部分塩基配列情報を作成してもよい。
25

さらに、ステップSA-1において、部分塩基配列作成部102aは、オーバーハング部位含有塩基配列作成部102kの処理により、オーバーハング部位を含む部分塩基配列情報を作成してもよい。具体的には、例えば、部分塩基配列作成部102aは、オーバーハング部位含有塩基配列作成部102kの処理により、

オーバーハング部位が含まれていることを表すオーバーハング部位含有情報が付加された部分塩基配列情報を作成し、作成された部分塩基配列情報とオーバーハング部位含有情報と相互に関連付けて部分塩基配列ファイル 106b の所定の記憶領域に格納してもよい。

- 5 なお、上述の予め定めた塩基数の上限は、オーバーハング部位を含まない場合は、好ましくは 28 以下、より好ましくは 22 以下、さらに好ましくは 20 以下であり、オーバーハング部位を含む場合は、好ましくは 32 以下、より好ましくは 26 以下、さらに好ましくは 24 以下である。また、予め定めた塩基数の下限は、オーバーハング部位を含まない場合は、好ましくは 13 以上、より好ましくは 16 以上、さらに好ましくは 18 以上であり、オーバーハング部位を含む場合は、好ましくは 17 以上、より好ましくは 20 以上、さらに好ましくは 22 以上である。そして、最も好ましい予め定めた塩基数は、オーバーハング部位を含まない場合は、19 であり、オーバーハング部位を含む場合は、23 である。

- 10 ついで、塩基配列処理装置 100 は、3' 末端塩基判定部 102b の処理により、
- 15 ステップ SA-1 にて作成された部分塩基配列情報の 3' 末端の塩基がアデニン、チミン、または、ウラシルであるか否かを判定し、判定した結果を判定結果ファイル 106c の所定の記憶領域に格納する（ステップ SA-2）。具体的には、例えば、塩基配列処理装置 100 は、3' 末端塩基判定部 102b の処理により、
- 20 ステップ SA-1 にて作成された部分塩基配列情報の 3' 末端の塩基がアデニン、チミン、または、ウラシルであるときには「1」を、そうでないときには「0」を判定結果ファイル 106c の所定の記憶領域に格納してもよい。

- 25 ついで、塩基配列処理装置 100 は、5' 末端塩基判定部 102c の処理により、
- ステップ SA-1 にて作成された部分塩基配列情報の 5' 末端の塩基がグアニン、または、シトシンであるか否かを判定し、判定した結果を判定結果ファイル 106c の所定の記憶領域に格納する（ステップ SA-3）。具体的には、例えば、塩基配列処理装置 100 は、5' 末端塩基判定部 102c の処理により、
- ステップ SA-1 にて作成された部分塩基配列情報の 5' 末端の塩基がグアニン、または、シトシンであるときには「1」を、そうでないときには「0」を判定結果ファイル 106c の所定の記憶領域に格納してもよい。

ついで、塩基配列処理装置 100 は、特定塩基含有判定部 102 d の処理により、ステップ SA-1 にて作成された部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であるか否かを判定し、判定した結果を判定結果ファイル 106 c の所定の記憶領域に格納する（ステップ SA-4）。具体的には、例えば、塩基配列処理装置 100 は、特定塩基含有判定部 102 d の処理により、ステップ SA-1 にて作成された部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報に含まれる、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基の数を判定結果ファイル 106 c の所定の記憶領域に格納してもよい。ステップ SA-4 における判定の規則は、ステップ SA-1 にて作成された部分塩基配列情報の 3' 末端近傍の塩基配列情報がアデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であることを規定しており、具体的に検索を行う際の一指標として 3' 末端から 7 塩基の範囲内の塩基配列情報がアデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基がリッチな塩基配列情報であることを規定している。

ここで、ステップ SA-4 において、「リッチな塩基配列情報」は、上述の <1> RNA 干渉の標的塩基配列検索方法に記述されている「リッチな配列」であり、具体的には、例えば、ステップ SA-1 にて作成された部分塩基配列情報が 19 塩基程度からなる場合、当該部分塩基配列情報の 3' 末端の 7 塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる 1 種または 2 種以上の塩基が少なくとも好ましくは 3 塩基以上、より好ましくは 4 塩基以上、特に好ましくは 5 塩基以上含まれる塩基配列情報である。

また、ステップ SA-2 からステップ SA-4 において、オーバーハング部位を含む部分塩基配列情報を判定する場合、部分塩基配列情報のオーバーハング部位を除いた配列部位を判定対象として判定する。

ついで、塩基配列処理装置 100 は、規定配列選択部 102 e の処理により、ステップ SA-2、ステップ SA-3、および、ステップ SA-4 にて判定された結果に基づいて、ステップ SA-1 にて作成された部分塩基配列情報から標的

遺伝子に特異的にRNA干渉を生じさせる規定配列情報を選択し、規定配列ファイル106dの所定の記憶領域に格納する（ステップSA-5）。

具体的には、例えば、塩基配列処理装置100は、規定配列選択部102eの処理により、ステップSA-2にて3'末端の塩基がアデニン、チミン、または、
5 ウラシルであると判定され、ステップSA-3にて5'末端の塩基がグアニン、または、シトシンであると判定され、かつ、ステップSA-4にて部分塩基配列情報の3'末端の7塩基からなる塩基配列情報が、アデニン、チミン、および、ウラシルからなる群より選ばれる1種または2種以上の塩基がリッチな塩基配列情報であると判定された部分塩基配列情報を規定配列情報として選択し、規定配列ファイル106dの所定の記憶領域に格納する。ここで、具体的には、例えば、塩
10 基配列処理装置100は、規定配列選択部102eの処理により、ステップSA-2、ステップSA-3、および、ステップSA-4にて出力される数値の積を算出し、当該積の値に基づいて、ステップSA-1にて作成された部分塩基配列情報から規定配列情報を選択してもよい。

15 ここで、塩基配列処理装置100は、オーバーハング部位付加部102fの処理により、ステップSA-5にて選択された規定配列情報の少なくとも一方の末端にオーバーハング部位を付加して、規定配列ファイル106dの所定の記憶領域に格納してもよい。具体的には、例えば、塩基配列処理装置100は、オーバーハング部位付加部102fの処理により、規定配列ファイル106dの規定配
20 列情報の項に記憶されている規定配列情報を、少なくとも一方の末端にオーバーハング部位が付加された規定配列情報に書き換えてもよい。なお、例えば、ターゲット側を検索する場合は、規定配列情報の両末端にオーバーハング部位を付加してもよい。

25 なお、上述のオーバーハング部位の塩基数は、上述の<2>RNA干渉を生じさせるポリヌクレオチドの塩基配列設計方法に記述されている塩基数であり、具体的には、例えば、2が特に好適である。

また、塩基配列処理装置100は、同一類似塩基配列検索部102gの処理により、ステップSA-5にて選択された規定配列情報と同一または類似の塩基配列情報を、他の塩基配列情報（例えばNCBIのRefSeqなどの公的データ

ベースで公開されている塩基配列情報) から、例えばBLAST、FASTA、
s s e a r c hなどの既存のホモロジー検索手法を用いて検索し、無関係遺伝子
標的評価部102hにて行われる無関係遺伝子標的評価処理により、検索された
同一または類似の塩基配列情報に基づいて、規定配列情報が標的遺伝子とは無関
5 係の遺伝子を標的にするか否かを評価してもよい。

具体的には、例えば、塩基配列処理装置100は、同一類似塩基配列検索部1
02gの処理により、ステップSA-5にて選択された規定配列情報と同一または
は類似の塩基配列情報を、他の塩基配列情報(例えばNCBIのRefSeqなど
の公的データベースで公開されている塩基配列情報) から、例えばBLAST、
10 FASTA、s s e a r c hなどの既存のホモロジー検索手法を用いて検索し、
無関係遺伝子標的評価部102hは、総和算出部102mの処理により、検索さ
れた同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基
配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付さ
れた同一類似の度合いを示す値(例えばBLAST、FASTAおよびs s e a
15 r c hの場合は、「E v a l u e」)に基づいて、同一類似の度合いを示す値の
逆数の総和を算出し、無関係遺伝子標的評価部102hは、総和基準評価部10
2nの処理により、算出された総和に基づいて、規定配列情報が標的遺伝子とは
無関係の遺伝子を標的にするか否かを評価してもよい。

ここで、無関係遺伝子標的評価部102hにて行われる無関係遺伝子標的評価
20 処理の詳細について図24を参照して説明する。

図24は、本実施形態における本システムの無関係遺伝子標的評価処理の一例
を示すフローチャートである。

まず、塩基配列処理装置100は、同一類似塩基配列検索部102gの処理に
より、ステップSA-5にて選択された規定配列情報と同一または類似の塩基配
25 列情報を、他の塩基配列情報(例えばNCBIのRefSeqなどの公的データ
ベースで公開されている塩基配列情報) から、例えばBLAST、FASTA、
s s e a r c hなどの既存のホモロジー検索手法を用いて検索し、規定配列情報
の識別情報(図19における「部分塩基配列識別情報」と、検索された同一また
は類似の塩基配列情報の識別情報(図19における「参照配列識別情報」と、検

索された同一または類似の塩基配列情報に付された同一類似の度合いを示す値（例えばBLAST、FASTAおよびsssearchの場合は、「E value」）（図19における「同一類似度」）とを相互に関連付けて、同一類似度ファイル106fの所定の記憶領域に格納する。

- 5 ついで、無関係遺伝子標的評価部102hは、総和算出部102mの処理により、検索された同一または類似の塩基配列情報のうち標的遺伝子とは無関係の遺伝子の塩基配列情報の総数、および、標的遺伝子とは無関係の遺伝子の塩基配列情報に付された同一類似の度合いを示す値（例えばBLAST、FASTAおよびsssearchの場合は、「E value」）に基づいて、同一類似の度合いを示す値の逆数の総和を算出し、規定配列情報の識別情報（図20における「部分塩基配列識別情報」）と算出された総和（図20における「総和」）とを相互に関連付けて、評価結果ファイル106gの所定の記憶領域に格納する（ステップSB-1）。
- 10

- ついで、無関係遺伝子標的評価部102hは、総和基準評価部102nの処理により、ステップSB-1にて算出された総和に基づいて（例えば、ステップSB-1にて算出された総和の大小などに基づいて）、規定配列情報が標的遺伝子とは無関係の遺伝子を標的にするか否かを評価し、評価結果（図20における「非標的」および「標的」）を評価結果ファイル106gの所定の記憶領域に格納する（ステップSB-2）。
- 15

- 20 これにて、メイン処理が終了する。

<8>医薬用組成物

- 本発明はまた、医薬的に有効な量の本発明のポリヌクレオチドを含む、医薬用組成物を提供する。本発明の医薬用組成物の用途は特に限定されず、有効成分たる各ポリヌクレオチドの標的配列を含む遺伝子の発現をRNAiにより抑制するため、これらの遺伝子が関与する疾患の予防および／または治療に有用である。
- 25

本発明の医薬用組成物に含まれるポリヌクレオチドの標的となる配列は、前述の（a）-（f）の規則を満たす規定配列として、選択された配列である。好ましくは、配列番号47～配列番号817081のいずれであってよい。特に、当該標的配列が標的遺伝子に高い特異性を有する配列であれば、ポリヌクレオチド

が当該標的配列を含む標的遺伝子に対してのみ選択的に発現抑制効果を奏しそれ以外の遺伝子に対しては発現抑制を生じさせない（すなわち、オフターゲット効果がより低い）ので、副作用の影響等を低減できる。したがって、ポリヌクレオチドの標的配列は、標的遺伝子に特異性が高いことがより好ましく、前述の（a）
5 -（f）の規則を満たす規定配列として、選択された配列（例えば、配列番号47～配列番号817081）の中でも、よりオフターゲット効果を低減可能な配列であることが好ましい。好ましい標的遺伝子の規定配列として、他の遺伝子の塩基配列とのミスマッチ数が少なくとも3塩基であり、かつ、少なくとも3塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を
10 選択することができる。「その他の遺伝子の数が最も少ない」とは、「少なくとも3塩基のミスマッチを有する塩基配列を有するその他の遺伝子」、即ち類似する遺伝子、ができるだけ存在しないこと、例えば、好ましくは10個以内、より好ましくは6個以内、さらにより好ましくは1個のみ存在する、あるいは、最も好ましくは全く存在しない、ことを意味する。

15 例えば、配列番号47～配列番号817081の中から、他の遺伝子の塩基配列とのミスマッチ数が3塩基であり（言い換えれば、19塩基からなる規定配列のうち当該ミスマッチ3塩基以外の16塩基が一致する）、かつ、3塩基のミスマッチを有する塩基配列を有するその他の遺伝子の数が最も少ない配列を選択して得られたのが、図46に示す53998種の配列である。よって、これらの配列
20 のいずれかであることが特に好ましい。これらの配列について、当該標的配列を含む遺伝子、当該遺伝子の関連する疾患名、当該遺伝子の遺伝子オントロジーにおけるGO_IDに係る生物学的機能カテゴリー、文献に基づく生物学的機能等の関係はその大半が明らかにされている。図46にこれらの関係を明らかにした。本発明のポリヌクレオチドは、標的配列を含む遺伝子の発現をRNAiにより抑
25 制するため、当該遺伝子の関連疾患の治療および／または予防、生物学的機能の調節が可能である。当業者は、本明細書、図面等の開示に基づき、ポリヌクレオチドの標的配列が明らかになれば当該ポリヌクレオチドが効果を奏しうる、疾患および／または生物学的機能を容易に把握することが可能である。

よって、本発明の医薬組成物は好ましくは、図46の関連疾患名の欄に記載の

疾患、あるいは、図46の生物学的機能カテゴリーおよび／または文献に基づく生物学的機能の欄に記載された遺伝子に関連する生物学的機能に係る疾患を治療および／または予防するために有用である。

本発明の医薬組成物はより好ましくは、以下1) - 9) のいずれかに属する遺

5 伝子関与する疾患を治療および／または予防するために有用である、

1) アポトーシスに関与している遺伝子；

2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；

3) 細胞周期に関与している遺伝子；

4) レセプターに関与している遺伝子；

10 5) イオンチャネルに関与している遺伝子；

6) シグナル伝達系に関与している遺伝子；

7) キナーゼおよびキナーゼ活性に関与している遺伝子；

8) 転写制御に関与している遺伝子；あるいは

9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与し
15 ている遺伝子。

図46の「生物学的機能カテゴリー」の欄は上記9つのカテゴリーに分類した生物学的機能を記載した。上記1) - 9) の各グループに属する遺伝子が、より詳細にどのような生物学的機能を有するかについて、図37-図45に各遺伝子と遺伝子オントロジーにおけるGO_IDとの関係を明らかにした。図37-図
20 45に記載の7桁の数値は各グループに属する遺伝子オントロジーでの属性（具体的には、ID番号）を示す。

遺伝子オントロジーについては、例えば、Gene Ontology Consortium, "Gene Ontology Consortium ホームページ", [online], 1999年, Gene Ontology Consortium, [平成16年10月25日検索]、インターネット<URL: <http://www.geneontology.org/>>を参照されたい。
25

遺伝子オントロジーには、例えば、「signal transducer activity (GO:0004871)」「receptor activity (GO:0004872)」のような遺伝子の属性が定義されており、さ

らに「receptor activityという属性は、signal transducer activityという属性を受け継ぐ」というような属性間の継承関係が定義されている。属性の定義および属性間の継承関係は、ジェーン・オントロジー・コンソーシアム: Gene Ontology Consortium (<http://www.geneontology.org/>) より入手可能である。また、ヒトやマウスの各遺伝子と、Gene Ontologyの属性との対応関係は、がんゲノム・アトミー・プロジェクト: Cancer Genome Anatomy Project (<http://cgap.nci.nih.gov/>) 等各種データベースより入手可能である。

遺伝子のGene Ontologyとの対応データから、例えばヒトZYX遺伝子(NM_003461)はreceptor activityを持つことがわかり、さらに属性間の継承関係を用いて、ZYX遺伝子は同時にsignal transducer activityをもつことを導くことができる。

遺伝子オントロジーでは、遺伝子の属性(annotation)について、各属性の定義や属性間の継承関係の定義がされている。この遺伝子のオントロジーにおける属性間の継承関係は、非循環有向グラフ(DAG)を形成する。遺伝子オントロジーでは、「遺伝子の機能(molecular function)」、「生物学的現象(biological process)」、「細胞内局在(cellular component)」により遺伝子を分類・整理している。そして、各分類方法において、属性間の継承関係が定義されている。遺伝子オントロジーにおける属性のID番号がわかれば、当業者は当該番号から各属性の内容を把握することが可能である。

また、図46では、上記の遺伝子オントロジーに係る9つの生物学的機能カテゴリーの他に、文献から取得された各遺伝子の生物学的機能情報についても記載している。具体的には、「文献に基づく生物学的機能」の欄に、PubMedから取得される文献に基づいた各遺伝子の生物学的機能情報を記載した。

さらに好ましい態様において、本発明の医薬組成物は、より好ましくは図46の配列番号(ヒト)または配列番号(マウス)の欄に記載の配列番号のいずれかの塩基配列を標的配列とするポリヌクレオチドを含む。各ポリヌクレオチドは、

標的配列の記載された整理番号と同じ整理番号の「関連疾患名」の欄に記載された疾患の治療および／または予防に有用である。あるいは、同じ整理番号の「生物学的機能カテゴリー」または、「文献に基づく生物学的機能」の欄に記載された生物学的機能の調節、(例えば、抑制および促進)、当該生物学的機能の関与する疾患の治療および／または予防に有用である。

本明細書において後述する実施例 8 の表 1 は、本発明のポリヌクレオチド、具体的には、かかるポリヌクレオチドに相当する siRNA のセンス鎖 (表 1 中の「siRNA-センス」の欄に塩基配列を記載)、アンチセンス鎖 (表 1 中の「siRNA-アンチセンス」の欄に塩基配列を記載: ただし、ここでは 3' から 5' 方向に配列を示す)、当該 siRNA の RNAi 対象となる標的遺伝子 (表 1 中の「遺伝子名」の欄に記載) および当該遺伝子における標的配列の位置を示している。表 1 に示されたように、本発明のポリヌクレオチドは、siRNA-センスまたは siRNA-アンチセンスとして、表 1 の「遺伝子名」の欄に記載された遺伝子に対して RNAi 効果を生じさせ、それにより、当該遺伝子の発現を有意に抑制した。よって、本発明のポリヌクレオチドを含む医薬組成物は、表 1 の「遺伝子名」の欄に記載された遺伝子に関連する疾患、具体的には、図 46 の「関連疾患名」の欄に記載した当該遺伝子に対応する疾患や、図 46 の「生物学的機能カテゴリー」の欄および／または「文献に基づく生物学的機能」の欄に記載した当該遺伝子に対応する生物学的機能に関連する疾患を治療または予防するために有用である。

実施例 8 において siRNA の標的とした配列 (表 1 の「標的配列」の欄参照) は、本発明にかかるポリヌクレオチドの標的となる標的配列のうち、図 46 に示す 53998 種の標的配列の中から無作為に選択したものである。後述するように、ここでは選択した全ての標的配列において、RNAi 効果が確認された。このように得られた実施例 8 での結果を統計学の「母比率を推定する方法」に基づき処理したところ、本発明にかかるポリヌクレオチド、具体的には、配列番号 47~817081 に示す標的遺伝子の規定配列と相同な配列を 2 本鎖領域の一方の鎖に含むポリヌクレオチド) が標的遺伝子の発現抑制効果を示すということは統計的に妥当であり、かつ、特に、前記規定配列が図 46 に示す 53998 種の

配列のいずれかであるポリヌクレオチドを用いた場合には、そのほぼ全てが標的遺伝子の発現抑制効果を示すということは統計的に妥当である、ということが明らかになった。

本発明にかかるポリヌクレオチドの標的となる遺伝子は、図46記載の疾患のいずれに関連するものであってもよいが、特に、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膵癌、前立腺癌、口腔癌、皮膚癌、甲状腺癌を含む各種癌に関連した遺伝子であると、当該遺伝子の発現抑制効果によって、これらの各種癌を治療または予防することが可能となる。したがって、限定されるわけではないが、本発明の医薬組成物は、これから選択される、いずれかの癌を治療または予防するために有用である。

本発明の医薬組成物は、最も好ましくは、配列番号817102ないし817651のいずれかの塩基配列を有するポリヌクレオチドを含む。各ポリヌクレオチドは、標的となる遺伝子（表1の「遺伝子名」の欄参照）の発現を抑制することができるため、当該遺伝子に関連する疾患（具体的には、当該遺伝子に関する図46の「関連疾患」の欄参照）や、当該遺伝子の生物学的機能（具体的には、当該遺伝子に関する図46の「生物学的機能カテゴリー」および／または「文献に基づく生物学的機能」の欄参照）に関連する疾患の治療および／または予防に有用である。これらの配列番号の塩基配列に対して上述したようなミスマッチ等の変異を有する配列も、RNAi効果を損なわない範囲において、利用可能である。

後述の実施例1～8において、本発明にかかる選択方法に従って選択された多数のポリヌクレオチドが有意なRNAi効果を示すことが実証された。よって、共通する規則に従って選択されたポリヌクレオチドが同様のRNAi効果を示すことは当業者にとって容易に理解される。また、当該規則の有効性は、前述の統計的な処理結果からも明らかである。したがって、例えば、表1記載の遺伝子において、具体的に開示された標的配列の標的位置とは異なる位置から、開示された標的配列とは異なる配列を、本発明に従って同じ遺伝子中から選択すれば、同じ遺伝子に対して同様の遺伝子発現抑制効果が得られることは容易に理解される。さらに、ある疾患に関与する遺伝子の発現の抑制効果が示されれば、本発明

に従って標的配列を選択してポリヌクレオチドを作成すれば、同じ疾患に関与する他の遺伝子についても、発現の抑制効果に基づく疾患の治療および／または予防が容易に理解される。

さらに、本発明の実施例 7 は、標的配列と完全に相同な配列を含む遺伝子以外の他の遺伝子であっても、当該他の遺伝子が少数、好ましくは 2 塩基以下のミスマッチを有する類似配列を含む場合、当該類似配列部分が RNA 干渉の標的となりうることを示した。よって、標的配列と完全に相同な配列を含む遺伝子以外の、類似配列を含む他の遺伝子も、本発明のポリヌクレオチドの標的対象となり RNA 干渉に基づく発現抑制効果が期待される。よって、本発明の医薬組成物はこれらの遺伝子の関与する疾患に対する治療・予防のためにも有用である。

RNA i を生じさせるポリヌクレオチドを医薬組成物に利用する場合には、製薬上許容されうる担体または希釈剤と本発明にかかるポリヌクレオチドとを配合して医薬組成物として用いてもよい。この場合の有効成分の担体または希釈剤に対する割合は、約 0.01 ～ 約 99.9 重量%の間である。

上記の担体または希釈剤は、気体、液体、固体であってもよい。例えば、担体は、水性またはアルコール性の液剤や懸濁剤、油性の液剤や懸濁剤、水中油型や油中水型乳剤、疎水性担体、液体ビヒクル、微結晶等であってもよい。

また、上記ポリヌクレオチドを含む本発明の医薬組成物は、例えば、他の治療用薬剤、界面活性剤、充填剤、緩衝剤、分散化剤、抗酸化剤、保存剤の少なくとも 1 つをさらに含んでもよい。このような医薬組成物は、経口、口内、肺内、直腸内、子宮内、腫瘍内、頭蓋内、鼻用、筋肉内、皮下、血管内、鞘内、経皮、皮内、関節内、腔内、接眼用、腔用、眼用、静脈内、腺内、組織内、リンパ管内、埋め込み型、吸入型、徐放用、及び腸溶性被覆の製剤であってよい。

例えば、ポリヌクレオチドを用いた経口製剤は、粉末剤、糖衣丸剤、タブレット、カプセル剤、シロップ剤、エアゾール剤、液剤、懸濁剤、水中油型や油中水型乳剤である乳剤であってもよい。また、局所製剤であって、担体が、クリーム剤、ゲル剤、軟膏剤、シロップ剤、エアゾール剤、パッチ剤、液剤、懸濁剤、乳剤であってもよい。また、注射用製剤や経皮用製剤であって、担体が、水性及びアルコール性の液剤や懸濁剤、油性の液剤や懸濁剤、水中油型や油中水型乳剤で

あってもよい。また、直腸用製剤、坐剤であってもよい。また、インプラント、カプセル又はカートリッジで供給される製剤、呼吸用又は吸入用製剤、エアゾール剤であってもよい。

このようなポリヌクレオチドを用いた医薬組成物の投与量は、患者の症状、年齢、体重等によって適宜選択される。また、被導入手体への投与方法として、被導入手体が細胞や組織の場合は、カルシウムフォスフェート法、エレクトロポレーション法、リポフェクション法、ウィルス感染、ポリヌクレオチド溶液浸漬法等が用いられ、また、胚に導入する場合は、マイクロインジェクション法やエレクトロポレーション法やウィルス感染等が用いられる。投与には、従来から用いられている市販の試薬、器機、装置、キット等を用いてもよく、例えば、TransIT（登録商標）-In Vivo Gene Delivery SystemやTransIT（登録商標）-QR Hydrodynamic Delivery Solution（ともにタカラバイオ株式会社製）等の導入試薬を用いて生体内細胞への投与を行ってもよい。また、ウィルス感染による方法としては、レトロウィルスベクター（例えば、BD Biosciences Clontech社製のRNAi Ready pSIREN-RetroQ Vector等）や、アデノウィルスベクター（例えば、同社製のBD Knockout Adenoviral RNAi System等）や、レンチウィルスベクター（例えば、タカラバイオ株式会社製のレトロネクテン等）を用いてもよい。

被導入手体が植物の場合には、植物体の体腔又は間質細胞等への注入又は噴霧による方法等が用いられる。また、被導入手体が動物個体の場合には、経口、非経口、経膈、経直腸、経鼻、経眼、腹膜内投与等の方法が用いられる。このような投与方法によって、1種又は2種以上のポリヌクレオチドが、同時又は時期をずらし、全身又は局所的に投与される。経口投与の例として、例えば、ポリヌクレオチドを導入した薬剤または食品を直接摂取してもよい。また、経口、経鼻投与の例として、例えば、吸入装置を用いて投与を行ってもよい。また、非経口投与の例として、例えば、針あり又は針なしの注射器を用いて、皮下、筋肉内、静脈内等へ投与を行ってもよい。

< 9 > 遺伝子発現抑制用組成物

本発明はさらに、本発明のポリヌクレオチドを含む、標的遺伝子の発現を抑制するための遺伝子発現抑制用組成物を提供する。

本発明において明らかにされたように、本発明のポリヌクレオチドは各標的配
5 列を含む遺伝子に対して発現抑制効果を奏する。当該遺伝子の発現抑制により、
当該遺伝子の生物学的機能が調節、好ましくは抑制される。

好ましくは、標的遺伝子は、図 4 6 の関連疾患名の欄に記載の疾患のいずれかの疾患に関連する。

好ましくは、標的遺伝子は、図 4 6 の遺伝子名の欄に記載された遺伝子のい
10 ずれかである。

あるいは、標的遺伝子が、以下 1) - 9) のいずれかに属する遺伝子である、

- 1) アポトーシスに関与している遺伝子；
- 2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；
- 3) 細胞周期に関与している遺伝子；
- 15 4) レセプターに関与している遺伝子；
- 5) イオンチャネルに関与している遺伝子；
- 6) シグナル伝達系に関与している遺伝子；
- 7) キナーゼおよびキナーゼ活性に関与している遺伝子；
- 8) 転写制御に関与している遺伝子；あるいは
- 20 9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

上記医薬組成物の項において前述したように、本発明にかかるポリヌクレオチド（具体的には siRNA）は、RNAi 効果を生じることが実施例 8 の結果および統計的処理結果から明らかである。特に、後述の実施例 8 では、本発明のポリヌクレオチドが、表 1 の遺伝子名の欄に記載された全ての遺伝子に関して mRNA の発現抑制効果（すなわち RNAi 効果）を奏することが確認された。よって、本発明のポリヌクレオチドを含む遺伝子発現抑制用組成物は、図 4 6 に示す標的遺伝子のいずれを標的としてもよいが、より好ましくは、標的遺伝子が、表 1 の遺伝子名の欄に記載された遺伝子のいずれかである。表 1 の各遺伝子に対し

ては、好ましくは、同じ行に記載の s i RNA-センスまたは s i RNA-アンチセンスの配列を使用することが望ましい。これらの塩基配列に対して上述したようなミスマッチ等の変異を有する配列も、発現抑制効果を損なわない範囲において、利用可能である。

5 標的遺伝子が表 1 の遺伝子のいずれかであれば、当該遺伝子に関連する疾患(具体的には、当該遺伝子に関する図 4 6 の「関連疾患」の欄参照)や、当該遺伝子の生物学的機能(具体的には、当該遺伝子に関する図 4 6 の「生物学的機能カテゴリー」および/または「文献に基づく生物学的機能」の欄参照)に関連する疾患の治療および/または予防に有用である。

10 例えば、本発明にかかる遺伝子発現抑制用組成物の標的となる遺伝子は、図 4 6 記載の疾患のいずれに関連するものであってもよいが、特に、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膵癌、前立腺癌、口腔癌、皮膚癌、甲状腺癌を含む各種癌に関連した遺伝子であると、当該遺伝子の発現抑制効果によって、これらの各種癌を治療または予防することが可能となる。した
15 がって、限定されるわけではないが、本発明の医薬組成物は、これらから選択される、いずれかの癌を治療または予防するために有用である。

本明細書において後述する実施例 2-5 では、ヒトビメンチン、ルシフェラーゼ、SARS ウイルス等の遺伝子に対する本発明のポリヌクレオチドの RNA i 効果を、mRNA の対照に対する相対的発現量で調べた。図 3 1、3 2 および 3
20 5 は、mRNA の発現量を定量 PCR で測定した結果が示されている。mRNA の相対発現量は図 3 1、3 2 および 3 5 において各々、約 7-8 % (実施例 2、図 3 1)、約 12-13 % (実施例 3、図 3 2)、数%ないし約 15 %未満 (実施例 5、図 3 5) と減少し、各遺伝子の発現抑制効果が確認された。また実施例 4 の図 3 4 は、RNA i 効果としての mRNA の発現量をルシフェラーゼ活性で調
25 べた結果であるが、同様に、対照と比較して数%ないし約 20 %未満に減少した。

さらに、実施例 8 では、関連疾患や生物学的機能が明らかとなった図 4 6 に示す遺伝子のうち、無作為に選択した約 300 種の遺伝子について、ヒト由来 HeLa 細胞での mRNA の発現量を相対的発現量で調べた。表 1 で示したように、当該遺伝子の発現抑制効果、すなわち RNA i 効果を評価するために算出した後

述のRQ値は、全て1未満であり、ほぼ全てが0.5未満であった。

本発明の遺伝子発現抑制用組成物において、「標的遺伝子の発現抑制」とは、標的遺伝子のmRNA発現量が実質的に減少することを意味する。mRNA発現量が実質的に減少していれば、その変化の幅の大小にかかわらず、発現抑制が実現
5 されている。上記のような実施例2-5および実施例8の結果をふまえると、本発明の遺伝子発現抑制組成物は、標的遺伝子のmRNA発現量を好ましくは少なくとも50%以下に減少させることが明らかである。

<10>治療または予防方法

本発明はさらに、医薬的に有効な量の、本発明のポリヌクレオチドを投与する
10 ことを含む、図46の関連疾患名の欄に記載の疾患を治療または予防するための方法。

[他の実施の形態]

さて、これまで本発明の実施の形態について説明したが、本発明は、上述した実施の形態以外にも、請求の範囲に記載した技術的思想の範囲内において種々の
15 異なる実施の形態にて実施されてよいものである。

例えば、塩基配列処理装置100がスタンドアローンの形態で処理を行う場合を一例に説明したが、塩基配列処理装置100とは別筐体で構成されるクライアント端末からの要求に応じて処理を行い、その処理結果を当該クライアント端末に返却するように構成してもよい。具体的には、例えば、クライアント端末はR
20 NA干渉の標的遺伝子の名称（例えば遺伝子名、アクセッション番号など）または標的遺伝子に係る塩基配列情報を塩基配列処理装置100に送信し、塩基配列処理装置100は当該名称に対応する塩基配列情報またはクライアント端末より送信された塩基配列情報に対して制御部102で行われる上述した各処理を行い、標的遺伝子に特異的にRNA干渉を生じさせる規定配列情報を選択してクライアント端末に送信してもよい。この場合、例えば、クエリーの遺伝子に対して公共データベースから配列情報を取得してsiRNAを選択してもよく、また、
25 例えば、予め全遺伝子のsiRNAを計算して記憶しておき、クライアント端末からの要求（遺伝子の名称またはアクセッション番号など）に対して即座にsiRNAを選択し、選択したsiRNAをクライアント端末に返してもよい。

また、塩基配列処理装置100は、標的遺伝子とは無関係の遺伝子に対する規定配列情報の特異性を確認してもよい。これにより、標的とする遺伝子のみに特異的にRNA干渉を生じさせる規定配列情報を選出することができる。

また、クライアント端末と塩基配列処理装置100とで構成される本システム
5 には、例えば、Webページの利用者から、siRNAのRNA干渉効果（例えば、「効く」、「効かない」など）の結果をWeb上でフィードバックしてもらい、利用者からフィードバックされた実験例を塩基配列処理装置100に蓄積し、上述したRNA干渉に有効なsiRNAの配列規則性を改善するためのインターフェース機能を導入してもよい。

10 また、塩基配列処理装置100は、規定配列情報からsiRNAのセンス鎖の塩基配列情報および当該センス鎖と相補的（complementary）なアンチセンス鎖の塩基配列情報を計算してもよい。具体的には、例えば、塩基配列処理装置100は、上述した各処理の結果、規定配列の両端に各2塩基のオーバーハング部を付加した23塩基の配列情報として「caccctgacccgcttctgctcatgg」を選択した場合、センス鎖の塩基配列情報「5'-CCCUGACCCGCUUCGUCAUGG-3'」およびアンチセンス鎖の塩基配列情報「5'-AUGACGAAGCGGGUCAGGGUG-3'」を計算する。
15 これにより、ポリヌクレオチドを発注する時にセンス鎖、アンチセンス鎖を手作業でまとめる必要がなくなり、利便性が高まる。

20 また、実施形態において説明した各処理のうち、自動的に行なわれるものとして説明した処理の全部または一部を手動的に行うこともでき、あるいは、手動的に行なわれるものとして説明した処理の全部または一部を公知の方法で自動的に行うこともできる。

この他、上記文書中や図面中で示した処理手順、制御手順、具体的名称、各種
25 の登録データや検索条件等のパラメータを含む情報、画面例、データベース構成については、特記する場合を除いて任意に変更することができる。

また、塩基配列処理装置100に関して、図示の各構成要素は機能概念的なものであり、必ずしも物理的に図示の如く構成されていることを要しない。

例えば、塩基配列処理装置100の各部または各装置が備える処理機能、特に

- 制御部102にて行なわれる各処理機能については、その全部または任意の一部を、CPU (Central Processing Unit) および当該CPUにて解釈実行されるプログラムにて実現することができ、あるいは、ワイヤードロジックによるハードウェアとして実現することも可能である。なお、プログラムは、後述する記録媒体に記録されており、必要に応じて塩基配列処理装置100に機械的に読み取られる。

- すなわち、ROMまたはHDなどの記憶部106などには、OS (Operating System) と協働してCPUに命令を与え、各種処理を行うためのコンピュータプログラムが記録されている。このコンピュータプログラムは、RAM等にロードされることによって実行され、CPUと協働して制御部102を構成する。また、このコンピュータプログラムは、塩基配列処理装置100に対して任意のネットワーク300を介して接続されたアプリケーションプログラムサーバに記録されてもよく、必要に応じてその全部または一部をダウンロードすることも可能である。
- また、本発明にかかるプログラムを、コンピュータ読み取り可能な記録媒体に格納することもできる。ここで、この「記録媒体」とは、フレキシブルディスク、光磁気ディスク、ROM、EPROM、EEPROM、CD-ROM、MO、DVD、フラッシュディスク等の任意の「可搬用の物理媒体」や、各種コンピュータシステムに内蔵されるROM、RAM、HD等の任意の「固定用の物理媒体」、あるいは、LAN、WAN、インターネットに代表されるネットワークを介してプログラムを送信する場合の通信回線や搬送波のように、短期にプログラムを保持する「通信媒体」を含むものとする。

- また、「プログラム」とは、任意の言語や記述方法にて記述されたデータ処理方法であり、ソースコードやバイナリコード等の形式を問わない。なお、「プログラム」は必ずしも単一的に構成されるものに限られず、複数のモジュールやライブラリとして分散構成されるものや、OS (Operating System) に代表される別個のプログラムと協働してその機能を達成するものをも含む。なお、実施の形態に示した各装置において記録媒体を読み取るための具体的な構成、読み取り手順、あるいは、読み取り後のインストール手順等については、周知の

構成や手順を用いることができる。

記憶部 106 に格納される各種のデータベース等（標的遺伝子塩基配列ファイル 106a ～ 標的遺伝子アノテーションデータベース 106h）は、RAM、ROM 等のメモリ装置、ハードディスク等の固定ディスク装置、フレキシブルディスク、光ディスク等のストレージ手段であり、各種処理やウェブサイト提供に用
5 いる各種のプログラムやテーブルやファイルやデータベースやウェブページ用ファイル等を格納する。

また、塩基配列処理装置 100 は、既知のパーソナルコンピュータ、ワークステーション等の情報処理端末等の情報処理装置にプリンタやモニタやイメージス
10 キャンナ等の周辺装置を接続し、該情報処理装置に本発明の方法を実現させるソフトウェア（プログラム、データ等を含む）を実装することにより実現してもよい。

さらに、塩基配列処理装置 100 等の分散・統合の具体的形態は明細書および図面に示すものに限られず、その全部または一部を、各種の負荷等に応じた任意の単位で、機能的または物理的に分散・統合して構成することができる（例えば、
15 グリッド・コンピューティングなど）。例えば、各データベースを独立したデータベース装置として独立に構成してもよく、また、処理の一部を CGI（Common Gateway Interface）を用いて実現してもよい。

また、ネットワーク 300 は、塩基配列処理装置 100 と外部システム 200 とを相互に接続する機能を有し、例えば、インターネットや、イントラネットや、
20 LAN（有線／無線の双方を含む）や、VAN や、パソコン通信網や、公衆電話網（アナログ／デジタルの双方を含む）や、専用回線網（アナログ／デジタルの双方を含む）や、CATV 網や、IMT2000 方式、GSM 方式または PDC / PDC-P 方式等の携帯回線交換網／携帯パケット交換網や、無線呼出網や、Bluetooth 等の局所無線網や、PHS 網や、CS、BS または ISDB
25 等の衛星通信網等のうちいずれかを含んでもよい。すなわち、本システムは、有線・無線を問わず任意のネットワークを介して、各種データを送受信することができる。

実施例

以下、実施例に基づき、本発明についてさらに詳細に説明する。なお、本発明は下記実施例に限定されるものではない。

[実施例1]

5 <1>RNA i 効果を測定するための遺伝子、発現ベクター

s iRNAによるRNA i 効果を測定するための標的遺伝子としてはホタル (Photinus pyralis, P. pyralis) の luciferase (luc) 遺伝子 (P. pyralis luc 遺伝子: accession number: U47296) を用い、これを含む発現ベクターとして pGL3-Control ベクター (Promega 社製) を用いた。P. pyralis luc 遺伝子断片はこのベクター中で SV40 のプロモーターとポリAシグナルで挟まれた形になっている。また内部コントロール遺伝子はウミシイタケ (Renilla reniformis, R. reniformis) の luc 遺伝子を用い、これを含む発現ベクターとして pRL-TK (P

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romega 社製) を用いた。

<2>21塩基2本鎖RNA (s iRNA) の合成

21塩基センス鎖と21塩基アンチセンス鎖RNA (図9に示めされている位置のもの; a~p) は、日立計測器サービス株式会社を通じてジェンセット株式会社に合成を委託した。

20 P. pyralis luc 遺伝子の発現を阻害するために用いた2本鎖RNAは、センス鎖とアンチセンス鎖とを会合させることで作製した。会合は、センス鎖RNAとアンチセンス鎖RNAを、10mM Tris-HCl (pH7.5), 20mM NaCl 反応液中で90℃、3分間加熱し、37℃で1時間インキュベートし、その後室温になるまで放置することで行った。2本鎖ポリヌクレ

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オチドの形成は、TBE緩衝液中での2%アガロースゲルでの電気泳動で検定するが、上記条件では殆どすべての1本鎖ポリヌクレオチドが2本鎖ポリヌクレオチドに会合していた。

<3>哺乳類細胞培養法

哺乳類培養細胞としては、ヒトのHeLa細胞とHEK293細胞、チャイニ

ーズハムスターのCHO-KI細胞(RIKEN Cell bank)を用いた。培地はDulbecco's modified Eagle's medium (Gibco BRL社製)に非働化10%牛胎児血清(Mitsubishi Kasei社製)および抗生物質としてpenicillin (Meiji社製) 10 units/ml, streptomycin (Meiji社製) 50 μ g/mlを添加したものを用いた。37℃、5%CO₂存在下で培養した。

<4>哺乳類培養細胞への標的遺伝子、内部コントロール遺伝子、siRNAの培養細胞へのトランスフェクション

哺乳類細胞は0.2~0.3×10⁶ cells/mlの濃度で24穴プレートにまき、1日後にCa-phosphate沈殿法(細胞工学ハンドブック、黒木登志夫ら編、羊土社(1992))で1.0 μ g pGL3-Control DNA, 0.5または1.0 μ g pRL-TK DNA, および0.01、0.1、1、10、100 nMの各siRNAを導入した。

<5>ショウジョウバエ細胞培養法

ショウジョウバエ培養細胞としてはS2細胞(Schneider, I., et al., J. Embryol. Exp. Morph., 27, 353-365 (1972))を用いた。培地はSchneider's Drosophila medium (Gibco BRL社製)に非働化10%牛胎児血清(Mitsubishi Kasei社製)および抗生物質としてpenicillin (Meiji社製) 10 units/ml, streptomycin (Meiji社製) 50 μ g/mlを添加したものを用いた。25℃、5%CO₂存在下で培養した。

<6>ショウジョウバエ培養細胞への標的遺伝子、内部コントロール遺伝子、siRNAの培養細胞へのトランスフェクション

このS2細胞は1.0×10⁶ cells/mlの濃度で24穴プレートにまき、1日後にCa-phosphate沈殿法(細胞工学ハンドブック、黒木登志夫ら編、羊土社(1992))で1.0 μ g pGL-3 Control DNA, 0.1 μ g pRL-TK DNA, および0.01、0.1、1、10、100 nMの各siRNAを導入した。

<7>RNA i 効果の測定

siRNAをトランスフェクションした細胞は、トランスフェクション後20時間後に回収し、Dual-Luciferase Reporter Assay System (Promega社製)を用いて、2種類のルシフェラーゼ (P. pyralis lucおよびR. reniformis luc) タンパクの発現量(ルシフェラーゼ活性)を測定した。発光量の測定はLumat LB9507 luminometer (EG&G Berthold)を用いて行った。

<8>結果

- 10 ルシフェラーゼ活性を測定した結果を図10に示す。また、ルシフェラーゼ活性と各塩基配列との対応を検討した結果を図11に示す。

図10中、Bで示されるグラフはショウジョウバエでの結果であり、Cで示されるグラフはヒトでの結果を示す。図10に示されるように、ショウジョウバエでは塩基数を21のRNAを作製することにより、殆どの配列においてルシフェラーゼ活性を抑制できた。他方、ヒトの場合については、単に塩基数を21としただけではルシフェラーゼ活性を抑制できる配列が得られにくいことが明らかとなった。

そこで、a~pのRNAの塩基配列の規則性を分析した。配列の分析は、図11に示すように2本鎖RNAの5箇所について塩基配列を分析した。図11の表中最上段のaのsiRNAについてみると、ルシフェラーゼ相対活性(RLA)は0.03、アンチセンス鎖について3'末端側から順に見ると、オーバーハング部(OH)の塩基配列がUC、続く7塩基(図11中3'-T)中のG/C含有量(グアニンまたはシトシンの含有量)は57%、さらに続く5塩基(図11中M)のG/C含有量は20%であり、さらに続く7塩基(図11中5'-T)のG/C含有量は14%であり、5'末端はUであり、合計のG/C含有量は32%である。表中、RLAの値が低いほど、RLAの活性が低く、すなわちルシフェラーゼの発現が抑制されたことを示す。

この結果から、RNA干渉を生じさせるポリヌクレオチドの塩基配列は、3'末端がアデニンまたはウラシルであり5'末端がグアニンまたはシトシンである

確率が極めて高いことが明らかになった。また、3'末端側の7塩基についてはアデニンまたはウラシルが豊富な状態であることが明らかとなった。

[実施例2]

1. 標的発現ベクター pTREC の構築

- 5 下記のようにして標的発現ベクターを構築した。標的発現分子は、RNAiの標的となる配列（以下「標的配列」という場合がある）を有するRNAを発現させる分子である。

- pCI-neo (GenBank AccessionNo.U47120、プロメガ社製)のCMVエンハンサー/プロモーター下流に標的mRNA配列を構築した(図25)。すなわち、
10 コザック配列(Kozak)、ATG配列、標的となる23塩基対配列クローニングサイト(target)および組み換えのための制限酵素(NheI、EcoRI、XhoI)認識配列を有する下記の2本鎖オリゴマーを合成した。2本鎖オリゴマーは配列表の配列番号1に示す配列とその相補的な配列とからなる。合成した2本鎖オリゴマーをpCI-neoのNheI、XbaIサイトに挿入し、
15 標的発現ベクターpTRECを構築した(図25)。なお、イントロンは、pCI-neoに当初から組み込まれているβ-グロビン由来のイントロン部位を用いた。

5'-gctagccaccatggaattcacgcgctctcgagtctaga-3' (配列番号1)

- 図25に示すpTRECは、プロモーターおよびエンハンサー(pro/enh)、とPCRプライマーに対応する領域PAR(F)1およびPAR(R)1を
20 備ええる。PAR(F)1にはイントロン(Intron)が挟み込まれており、発現ベクターそのものがPCRの鋳型とならないように設計されている。pTRECは、RNAの転写後、真核生物の培養細胞などのスプライシングが行われる環境下において、イントロン部位が除去され、PAR(F)1が連結される。p
25 TRECから形成されたRNAはRT-PCRにより増幅できる。イントロンは、pCI-neoに当初から組み込まれているβ-グロビン由来のイントロン部位を用いた。

pTRECには、コントロールとしてネオマイシン耐性遺伝子(neo)が組み込まれており、ネオマイシン耐性遺伝子内の配列の一部に対応するPCRプラ

イマーを作製し、ネオマイシン耐性遺伝子の一部についてRT-PCRを行うことにより、ネオマイシン耐性遺伝子を内部標準コントロール（インターナルコントロール）として用いることができる。PAR（F）2およびPAR（R）2は、ネオマイシン耐性遺伝子中のPCRプライマー対応領域を示す。なお、図25の例には示していないが、PAR（F）2またはPAR（R）2の少なくとも一方にもイントロンを挟み込んでおくこともできる。

2. 標的mRNA検出用プライマーの効果

（1）培養細胞へのトランスフェクション

24穴プレートの1穴あたりに $0.2 \sim 0.3 \times 10^6$ cellsのHeLa細胞をまき、1日後にLipofectamine 2000（Invitrogen社製）を用いて、マニユアルにしたがって $0.5 \mu\text{g}$ のpTRECベクターをトランスフェクトした。

（2）細胞の回収およびmRNAの定量

トランスフェクションの1日後、細胞を回収し、Trizol（Invitrogen社製）を用いて全RNAを抽出した。このRNA 100 ng を用いて、オリゴ（dT）をプライマーとし、SuperScript II RT（Invitrogen社製）により逆転写してcDNA合成反応を行った。コントロールとして、逆転写酵素を加えないものを用意した。得られたcDNAの320分の1量をPCRテンプレートとし、SYBRGreen PCR Master Mix（Applied Biosystems社製）を用いて、 $50 \mu\text{l}$ の反応系で定量的PCRを行い、標的mRNA（mRNA（T）と称する）および、内部コントロールとしてpTREC上のネオマイシン耐性遺伝子に由来するmRNA（mRNA（C）と称する）を定量した。定量的PCRにはリアルタイムモニタリング装置ABI PRISM 7000（Applied Biosystems社製）を用い、mRNA（T）の定量にはプライマー対T（配列表配列番号2、3）、mRNA（C）の定量にはプライマー対C（配列表配列番号4、5）をそれぞれ使用した。

25 プライマー対T：

aggcacigggcagggtgc （配列番号2）

tgctcgaagcatiaacccctaccta （配列番号3）

プライマー対C

atcaggatgatctggacgaag （配列番号4）

ciccttcagcaaatatcacgggi (配列番号 5)

図 2 6 および図 2 7 に、PCR の結果を示す。図 2 6 および図 2 7 は、縦軸にそれぞれの PCR 産物を、横軸に PCR のサイクル回数をとり、グラフに表したものである。ネオマイシン耐性遺伝子の場合、逆転写酵素により cDNA を合成したもの (+RT) と、逆転写酵素を加えないコントロール (-RT) で、得られた PCR 産物量の増幅の差は小さかった (図 2 6)。これは、cDNA のみならず、細胞内に残っているベクターも PCR の鋳型となって増幅されたことを示す。他方、標的配列 mRNA では、逆転写酵素を添加した場合 (+RT) と添加しない場合 (-RT) とによる差が大きかった (図 2 7)。この結果は、プライマー対 T のうち的一方がイントロンをはさむ形でデザインされているため、イントロンが除去された mRNA に由来する cDNA が効率的に増幅される一方、イントロンを有する残存ベクターが鋳型となりにくくなっていることを示している。

3. siRNA による標的 mRNA の発現抑制

(1) ターゲット発現ベクターへの評価配列のクローニング

ヒトビメンチン (VIM) 遺伝子 (RefSeqID: NM_003380) コード領域の 812 - 834、35 - 57 に相当する配列を評価の対象とした。これらの配列および EcoRI、XhoI の認識配列を有する下記配列表配列番号 6 および 7 の合成オリゴヌクレオチド (評価配列フラグメント) を作製した。

評価配列 VIM35 (VIM の 35 - 57 に相当)

5'-gaattcgcaggatgttcggcgccggcctcgag-3' (配列番号 6)

評価配列 VIM812 (VIM の 812 - 834 に相当)

5'-gaattcacgtacgtcagcaaatgaaagtcctcgag-3' (配列番号 7)

得られた評価配列フラグメントの両端にある EcoRI、XhoI サイトを利用し、pTREC の EcoRI、XhoI サイト間に、新たな標的配列としてクローニングし、pTREC-VIM35、pTREC-VIM812 を構築した。

(2) siRNA の作製

評価配列 VIM35 (配列表配列番号 8、図 2 8)、評価配列 VIM812 (配列番号 9、図 2 9)、およびコントロール配列 (siControl、配列番号 10、図 3 0) にそれぞれ相当する siRNA フラグメントを合成し、アニーリングした。

下記 s i R N A の各配列においては、3'末端にオーバーハング部を設けてある。

siVIM35 5'-aggauugucggcgccgggc-3' (配列番号8)

siVIM812 5'-guacgucagcaauaugaaugu-3' (配列番号9)

コントロールとして、ルシフェラーゼ遺伝子に対する s i R N A を用いた。

5 siControl 5'-cauucuaucgcuggaagaug-3' (配列番号10)

(3) 培養細胞へのトランスフェクション

24穴プレートの1穴あたりに $0.2 \sim 0.3 \times 10^6$ cells の He L a 細胞をまき、1日後に Lipofectamine 2000 (Invitrogen 社製) を用いて、マニュアルにしたがって $0.5 \mu\text{g}$ の p T R E C - V I M 3 5 または p T R E C - V I M 8 1 2 と、それぞれの V I M 由来配列に相当する 100 nM の s i R N A (s i V I M 3 5 , s i V I M 8 1 2) を同時にトランスフェクトした。コントロール細胞には、 $0.5 \mu\text{g}$ の p T R E C - V I M 3 5 または p T R E C - V I M 8 1 2 と 100 nM のルシフェラーゼ遺伝子に対する s i R N A (s i C o n t r o l) を同時にトランスフェクトした。

15 (4) 細胞の回収およびmRNAの定量

トランスフェクションの1日後、細胞を回収し、Trizol (Invitrogen) を用いて全RNAを抽出した。このRNA 100 ng を用いて、オリゴ(dT)をプライマーとし、SuperScript II RT (Invitrogen 社製) により逆転写してcDNAを得た。得られたcDNAの320分の1量をPCRテンプレートとし、SYBR Green 20 PCR Master Mix (Applied Biosystems 社製) を用いて、 $50 \mu\text{l}$ の反応系で定量的PCRを行い、評価しようとするVIM由来の配列を含むmRNA (mRNA (T) と称する) および内部コントロールとして、p T R E C 上のネオマイシン耐性遺伝子に由来するmRNA (mRNA (C) と称する) を定量した。

定量的PCRにはリアルタイムモニタリング装置 ABI PRIZM7000 (Applied 25 Biosystems 社製) を使い、mRNA (T) の定量にはプライマー対T (配列表配列番号2および3)、mRNA (C) の定量にはプライマー対C (配列表配列番号4および5) をそれぞれ使用した。得られたそれぞれのmRNAの値の比(T/C)を縦軸(標的mRNA相対量(%))としてグラフに表した(図31)。

コントロール細胞の場合、ルシフェラーゼ遺伝子に対する s i R N A は標的m

RNAに効果を及ぼさないため、T/C比はほぼ1になった。VIM812 siRNAでは、T/C比が著しく下がった。これは、VIM812 siRNAが、相当する配列を有するmRNAを切断したためであり、VIM812 siRNAがRNAi効果を有することが示された。一方、VIM35 siRNAの場合、T/C比はコントロールとほぼ同じ値であったことから、VIM35の配列にはRNAi効果がほとんどないことが示された。

【実施例3】

1. siRNAによる内在性ビメンチンの発現抑制

(1) 培養細胞へのトランスフェクション

24穴プレートに1穴あたりに0.2~0.3×10⁶ cellsのHeLa細胞をまき、1日後にLipofectamine 2000 (Invitrogen社製)を用いて、マニュアルにしたがって、VIMに対するsiRNA (siVIM35またはsiVIM812) またはコントロールsiRNA (siControl) 100 nM、トランスフェクション効率のコントロールとして0.5 μgのpEGFP (Clontech社製)を同時にトランスフェクトした。pEGFPはEGFPが組み込まれている。

(2) 内在性ビメンチンmRNAの測定

トランスフェクションの3日後、細胞を回収し、Trizol (Invitrogen社製)を用いて全RNAを抽出した。このRNA 100 ngを用いて、オリゴ(dT)をプライマーとし、SuperScript II RT (Invitrogen社製)により逆転写してcDNA合成反応を行なった。得られたcDNA産物を鋳型として、ビメンチンに対するプライマーVIM-F3-84、VIM-R3-274 (配列番号11、12)を用いてPCRを行った。

VIM-F3-84; gagctacgtgactacgtcca (配列番号11)

VIM-R3-274; gtctctgaactcgggtgtgat (配列番号12)

また、コントロールとして、β-アクチンに対するプライマーACTB-F2-481、ACTB-R2-664 (配列番号13、14)を用いてPCRを行い、各サンプル間のβ-アクチンの定量値を合わせたうえで、ビメンチンの発現量を評価した。

ACTB-F2-481; cacactgtgcccatctacga (配列番号13)

ACTB-R2-664; gccacitcttgcctgaagtc (配列番号14)

結果を図32に示す。図32では、siControl (すなわち、標的とは無関係な配列)を入れた場合を100%として比較し、VIMに対するsiRNAを入れた場合に、VIMのmRNAがどの程度減少したかを表している。si VIM-812は効果的にVIM mRNAを抑制できたのに対して、si VIM-35を用いた場合はほとんどRNAi効果を示さなかった。

(3) 細胞の抗体染色

トランスフェクションの3日後、細胞を3.7%のホルムアルデヒドにより固定し、定法によりブロッキングを行った。その後、ウサギ抗ビメンチン抗体 (α -VIM) または内部コントロールとしてウサギ抗Yes抗体 (α -Yes) を加え、室温で反応させた。その後、細胞表面をPBS (Phosphate Buffered Saline; リン酸緩衝生理食塩水) で洗浄し、二次抗体として蛍光標識抗ウサギIgG抗体を加え、室温で反応させた。細胞表面をPBSで洗浄の後、蛍光顕微鏡による観察を行った。

蛍光顕微鏡観察の結果を図33に示す。図33中、9つの各枠内において白く現れている部分が蛍光部分である。EGFPおよびYesについては、何れの細胞でも同程度の発現が確認された。siControl、siVIM35を導入した細胞では、ビメンチンの抗体染色による蛍光が観察され、内在性ビメンチンの存在が確認された。一方、siVIM812を導入した細胞では、siControl、siVIM35を導入した細胞に比べて蛍光が著しく弱かった。この結果は、siVIM812により内在性のビメンチンmRNAが干渉を受けた結果、ビメンチンの蛋白質の発現量が減少したことを示すものであり、siVIM812は内在性ビメンチンmRNAにもRNAi効果を有することが明らかになった。

本発明のアッセイ系で得られた結果【実施例2】は、実際に内在性遺伝子に対してそれぞれのsiRNAを用いた結果【実施例3】とよく一致していたため、このアッセイ系は任意のsiRNAのRNAi活性を評価する方法として有効であることが示された。

【実施例4】

上記所定の規則 (a) ~ (d) に基づき塩基配列を設計した。塩基配列の設計は、上記 s i RNA 配列設計プログラムを実行する塩基配列処理装置によって行った。塩基配列は、RNA i 活性を有すると予測される配列 15 種 (配列番号 15 ~ 29) と、RNA i 活性を有しないと予測される配列 5 種 (配列番号 30 ~ 34) を用意した。

設計された配列に基づき標的配列および評価対象の s i RNA を調製する以外は、上記実施例 1 と同様にして、ルシフェラーゼ活性を測定することにより、RNA i 活性の評価を行った。結果を図 34 に示す。ルシフェラーゼ相対活性値が低いものが効いている状態、すなわち RNA i 活性を備えた s i RNA である。

上記プログラムにより RNA i 活性を有すると予測された s i RNA は、全てルシフェラーゼの発現を効果的に抑制した。

[RNA i 活性を示した配列; 規定配列部分、オーバーハング部を含まない]

5, gacgccaaaaacataaaga (配列番号 15)

184, gtiggcagaagctatgaaa (配列番号 16)

272, gtgtgggcgcgttatatta (配列番号 17)

309, ccgcgaacgacatttataa (配列番号 18)

428, ccaatcatccaaaaaatta (配列番号 19)

515, cctcccggttttaataat (配列番号 20)

658, gcatgccagatcctatt (配列番号 21)

695, ccgatactgcgatttttaa (配列番号 22)

734, gggtttgggaatgttacta (配列番号 23)

774, gatttcgagtcgtcttaat (配列番号 24)

891, gcactctgattgacaaaata (配列番号 25)

904, caaatacgatttatctaat (配列番号 26)

1186, gattatgtccggttatgta (配列番号 27)

1306, ccgctgaagtcctcgatt (配列番号 28)

1586, ctgcagcgaagaaaaatca (配列番号 29)

[RNA i 活性を示さなかった配列; 規定配列部分、オーバーハング部を含まない]

14, aacataaagaagggcccg (配列番号 30)
 265, tatgccgggtgttggcgcg (配列番号 31)
 295, agttgcagttgccccg (配列番号 32)
 411, acgtgcaaaaaagctccc (配列番号 33)
 5 1044, ttctgattacacccgaggg (配列番号 34)

[実施例 5]

SARS ウィルスに対する siRNA を設計し、それらの RNAi 活性を調べた。標的配列および評価対象の配列をそれぞれ変更する以外は、RNAi 活性は上記実施例 2 と同様のアッセイを行うことにより評価した。

- 10 siRNA は、SARS ウィルスのゲノムから、3CL-PRO、RdRp、Spike glycoprotein、Small envelope E protein、Membrane glycoprotein M、Nucleocapsid protein、s2m motif の各所について、上記 siRNA 配列設計プログラムを用い所定の規則性に合致するものを設計した。

- 図 35 アッセイの結果、規則性に合致するように設計した 11 個の siRNA
 15 は、それぞれ対応する siRNA の配列をターゲットとして組み込んだ RNA を効果的に抑制した。siControl (SARS とは関係のない配列) を入れた場合を 100% として、SARS の各 siRNA を入れた場合の相対標的 mRNA 量を示す。各 siRNA を入れた場合、標的の RNA が 10% 程度あるいはそれ以下まで減少しており、RNAi 活性があることが確認された。

- 20 [設計した siRNA の配列 (規定配列部分、オーバーハング部を含まない)]
 siControl; gggcgcggtcggtaaagtt (配列番号 35)
 3CL-PRO; SARS-10754; ggaattgccgtcttagata (配列番号 36)
 3CL-PRO; SARS-10810; gaattggtcgtactatcctt (配列番号 37)
 RdRp; SARS-14841; ccaagtaatcgtaacaat (配列番号 38)
 25 Spike glycoprotein; SARS-23341; gcttggcgcatatattctta (配列番号 39)
 Spike glycoprotein; SARS-24375; cctttcgcgacttggataaa (配列番号 40)
 Small envelope E protein; SARS-26233; glgctactgtctgcaaat (配列番号 41)
 Small envelope E protein; SARS-26288; ctactcgcggtgtttaaaaat (配列番号 42)
 Membrane glycoprotein M; SARS-26399; gcagacaacggtactatta (配列番号 43)

Membrane glycoprotein M; SARS-27024; ccggtagcaacgacaata (配列番号 44)
 Nucleocapsid protein; SARS-28685; cgtagtcgcggtaattcaa (配列番号 45)
 s2m motif; SARS-29606; gatcgagggtacagtgaa (配列番号 46)

〔実施例 6〕

5 上記「<5> s i RNA 配列設計プログラム」および「<7> s i RNA 配列設計プログラムを実行する塩基配列処理装置等」に従って、下記 s i RNA を設計した。なお、プログラム実行の際の設定条件は、下記の通りである。

(設定条件)

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルである。

10 (b) 5'末端の塩基が、グアニンまたはシトシンである。

(c) 3'末端の 7 塩基の配列において、4 塩基以上が、アデニン、チミンおよびウラシルからなる群より選ばれる 1 種または 2 種以上である。

(d) 塩基数が、19 である。

(e) 10 塩基以上グアニンまたはシトシンが連続する配列を含まない。

15 (f) 目的生物の全遺伝子配列のうち、前記標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列とのミスマッチ数が 2 塩基以下の類似配列が含まれない。

設計された s i RNA の配列を配列表の配列番号 47 ~ 配列番号 817081 に示す。なお、配列表の配列番号 47 ~ 配列番号 817081 に記載された、各
 20 s i RNA の目的生物の生物名は、配列表の〈213〉に記載されている。また、RNA i 対象遺伝子の遺伝子名、対象遺伝子の accession、および、対象遺伝子の塩基配列において規定配列に該当する部分については、配列表の〈223〉

(Other information) に記載されている。なお、ここでの遺伝子名および accession 情報は、NCBI の「RefSeq」

25 (HYPERLINK "http://www.ncbi.nlm.nih.gov/" http://www.ncbi.nlm.nih.gov/) に対応するものであり、RefSeq にアクセスすることによって、各遺伝子の情報(遺伝子の配列、機能等)を取得することができる。

配列番号 47 に記載の s i RNA を例にして説明すると、目的生物は Homo sapiens であり、対象遺伝子の遺伝子名は、ATBF1 であり、対象遺伝子の accession

は、NM_006885.2であり、規定配列に該当する部分は、NM_006885.2の塩基配列のうち塩基番号908-926の19塩基である。RefSeqにアクセスすると、当該対象遺伝子は、AT-binding transcription factor 1に関連する遺伝子であることが分かる。

5 [実施例7]

s i RNAとのミスマッチ数が小さい配列を含む他の遺伝子への影響を調べるため、実施例5と同様の手法で、ホタルルシフェラーゼに対するs i RNAを設計し、当該s i RNAとミスマッチ数が小さい類似配列に対するRNA i効果を調べた。

10 [設計したs i RNAの配列(規定配列部分、塩基数2のオーバーハング部を含む)]

3-36 gccattctatccgctggaagatg (配列番号817082)

[設計したs i RNAの類似配列(大文字で表記した塩基がミスマッチ部位)]

3-36.R1 gccattctatccgcGggCGgatg (配列番号817083)

15 3-36.R2 gccattctatccgcGggGGgatg (配列番号817084)

3-36.R3 gccattctatccgcGggaCgatg (配列番号817085)

3-36.R4 gccattctatccgctggCGgatg (配列番号817086)

3-36.R5 gccattctatccgctggaGgatg (配列番号817087)

3-36.R6 gccattctatccgctgTaaTatg (配列番号817088)

20 3-36.R7 gccattctatccgctAAaagatg (配列番号817089)

3-36.R8 gccattctatccgctATaaAatg (配列番号817090)

3-36.L1 gccGGCcCGtccgctggaagatg (配列番号817091)

3-36.L2 gccCGtCCGtccgctggaagatg (配列番号817092)

3-36.L3 gccGtCctGtccgctggaagatg (配列番号817093)

25 3-36.L4 gccACCcGatccgctggaagatg (配列番号817094)

3-36.L5 gccattAtatccgctggaagatg (配列番号817095)

3-36.01A gcAattctatccgctggaagatg (配列番号817096)

3-36.01G gcGattctatccgctggaagatg (配列番号817097)

3-36.01U gcTattctatccgctggaagatg (配列番号817098)

3-36.19G gccattctatccgcctggaagGtg (配列番号 8 1 7 0 9 9)

3-36.19C gccattctatccgcctggaagCtg (配列番号 8 1 7 1 0 0)

3-36.19U gccattctatccgcctggaagTtg (配列番号 8 1 7 1 0 1)

- 図 3 6 に示すアッセイの結果、塩基数 19 の塩基配列を設計する場合、標的遺
 5 伝子以外の他の遺伝子がミスマッチ数 2 塩基以下の類似配列を含む場合、当該類
 似配列部分が RNA 干渉の標的となりうる可能性が高いことが確認された。

[実施例 8]

- 本実施例においては、表 1 A-K 記載の塩基配列を有する 21 塩基長のセンス
 鎖 RNA (表 1 中の「s i RNA-センス」の欄に塩基配列を記載) とアンチセ
 10 ンス鎖 RNA (表 1 中の「s i RNA-アンチセンス」の欄に塩基配列を記載：
 ただし、当該塩基配列は、3' から 5' 方向に配列を記載している) とからなる
 s i RNA を用いた。表 1 に示すように、各 s i RNA は、RNA i の対象とな
 る遺伝子(「遺伝子名」の欄参照：以下、標的遺伝子と呼ぶ場合がある) のコード
 領域の所定位置(「標的位置」の欄参照)に配置された標的配列(「標的配列」の
 15 欄参照)、特に、当該標的配列のうちの 5' 末端から 3 番目の塩基から 3' 末端か
 ら 3 番目までの塩基に相当するいわゆる規定配列に基づいて適宜設計を行った。
 そして、各 s i RNA について、ヒト由来の HeLa 細胞を用いて RNA i 効果
 を調べた。具体的には、センス鎖(s i RNA-センス)として配列番号 8 1 7
 1 0 2-8 1 7 6 5 0 中の偶数番号の配列番号の塩基配列を、そして、アンチセ
 20 ンス鎖(s i RNA-アンチセンス)として配列番号 8 1 7 1 0 2-8 1 7 6 5
 0 中の奇数番号の配列番号の塩基配列を調べた。以下、実施例における具体的方
 法を説明する。

1. s i RNA の合成

- センス鎖およびアンチセンス鎖とからなる 2 本鎖 s i RNA を、前述の本発明
 25 にかかる規則(実施態様 [1] 等に記載の (a) ~ (d) の規則)にしたがって
 、各標的遺伝子の前記規定配列に基づき適切に配列設計した。そして、かかる設
 計に基づいて、プロリゴ・ジャパン株式会社に合成を委託して用意した。具体的
 な合成方法として、ここでは、表記した所定の塩基配列を有するセンス鎖とアン
 チセンス鎖とを、10 mM の Tris-HCl (pH 7.5)、20 mM の NaC

1 反応溶液中、90℃で3分間加熱した。そして、37℃で1時間インキュベ
トし、その後、室温になるまで放置して会合させ2本鎖 siRNA を形成した。
このようにして形成した2本鎖 siRNA は、TBE緩衝液中で2%アガロース
ゲルを用いる電気泳動に供し、それによりセンス鎖とアンチセンス鎖との会合の

5 確認を行った。

2. 細胞培養

実施例では、ヒト由来のHeLa細胞を用いた。HeLa細胞の培地（以下、
細胞培地と呼ぶことがある）としては、Dulbecco's Modified Eagle's medium (DMEM: Invitrogen社製) に、
10 非働化10%牛胎児血清 (FBS: Biomedicals, inc社製) を添
加して調製した培地を用いた。かかる培地中で、HeLa細胞を37℃、5% C
O₂ 存在下で培養した。

3. RNAiの対象となる標的遺伝子

子宮頸部癌の細胞であるHeLa細胞を用いており、ここでは、かかるHeL
15 a細胞の内在性遺伝子であって当該細胞内で高発現している表1の各遺伝子が、
siRNAによるRNAiの対象、すなわちRNAiの標的遺伝子となる。本実
施例では、HeLa細胞を用いてこれらの各遺伝子における各siRNAのRN
Ai効果を調べ、それにより、当該遺伝子に関連する疾患や生物学的機能（具
体的には、図46の「関連疾患名」、「生物学的機能カテゴリー」および／または「
20 文献に基づく生物学的機能」の欄の記載参照）に関するsiRNAの効果、すな
わち、疾患の予防および治療効果や生物学的機能の調節効果を検討した。なお、
ここでは、内部コントロール遺伝子として、HeLa細胞の内在性遺伝子である
GAPDHを利用した。

4. siRNAの細胞への導入（トランスフェクション）

25 まず、HeLa細胞を 5×10^4 細胞/wellの密度で24穴プレートにま
き、上記の細胞培養条件で24時間培養した後に、1wellにつき、5nMの
siRNAを導入した。かかる導入後、HeLa細胞を37℃で24時間培養し
た。ここでは、かかる導入に関し、導入試薬としてLipofectamine
2000 (Invitrogen社製) を用い、導入時に使用する培地としてD

MEMを用いた。また、具体的な導入方法としては、Lipofectamine 2000とsiRNAとを含むOpti-MEM培地（Invitrogen社製）を細胞培地へ添加し、HeLa細胞を培養することにより、siRNAを細胞内に導入した。このようにsiRNAが導入されたHeLa細胞を、以下で

一方、後述のPCRにおける標的遺伝子由来のmRNA量の補正用に、以下のキャリブレーターサンプルを用意した。キャリブレーターサンプルでは、Lipofectamine 2000を含みsiRNAを含まないOpti-MEM培地を上記細胞培地へ添加してHeLa細胞を培養し、それ以外は、siRNAを導入した評価サンプルに対する処理と同様の処理を行って調製した。

5. RNAi効果の測定

上記の導入を行った後、上記評価サンプルおよびキャリブレーターサンプルについて、HeLa細胞を回収した。そして、回収した細胞をABI PRISM（登録商標）6700 Automated Nucleic Acid Workstation（Applied Biosystems社製）に供し、マニュアルに従ってかかる装置を操作してRNAの抽出および逆転写によるcDNAの合成を行った。

続いて、得られたcDNAを鋳型とし、SYBR Green PCR Master Mix（Applied Biosystems社製）を用いて、50μlの反応系で定量的PCRを行った。かかる定量的PCRには、リアルタイムモニタリング装置としてABI PRISM（登録商標）7900HT Sequence Detection Systemを用い、マニュアルに従ってかかる装置を操作した。また、PCRのプライマーには、種々検討の結果得られた最適プライマーを用いた。

本実施例では、得られたPCR定量結果を、「比較Ct法」と呼ばれる方法により解析した。当該方法については、Applied Biosystems社のホームページ<http://www.appliedbiosystems.co.jp>に説明が開示されているのでここでは詳細説明は省略するが、当該方法の概略を説明すると、この方法は、キャリブレーターサンプルと比較して評価サ

ンプルが何サイクル早く（または遅く）Threshold Lineに到達するかに着目して相対定量するものである。

具体的には、まず、PCRにより、評価サンプルおよびキャリブレーションサンプルについて、標的遺伝子由来の塩基配列を含む相対的なmRNA量に相当するCt1と、内部コントロール遺伝子由来の塩基配列を含む相対的なmRNA量に相当するCt2とを定量した。以下においては、評価サンプルの上記Ct1を「Ct1 (E)」と呼び、上記Ct2を「Ct2 (E)」と呼ぶ。また、キャリブレーションサンプルの上記Ct1を「Ct1 (C)」と呼び、上記Ct2を「Ct2 (C)」と呼ぶ。

- 10 ここで、「Ct」は、Threshold Lineに達するサイクル数であり、具体的には、下記(1)式で定義される。なお、ここでは増幅効率を1としている。Ctに添付された数字は、「1」が標的遺伝子由来の場合のmRNA量であることを示しており、「2」が内部コントロール遺伝子由来の場合のmRNA量であることを示している。また、Ctに添付された(E)および(C)は、「E」が評価サンプルであることを示しており、「C」がキャリブレーションサンプルであることを示している。添付記載の「1」、「2」、「E」、「C」にかかわらず、「Ct」は下記のように定義される。

$$Ct = (\log [DNA]_t - \log [DNA]_0) / \log 2 \quad \dots (1)$$

- 20 ただし、(1)式中、[DNA]_tは、Threshold Lineに達した際のDNA量を示しており、[DNA]₀は、mRNAから逆転写したcDNAの初期量を示している。

- 25 このようにPCRによる定量で取得したCt1(E)、Ct2(E)、Ct1(C)、Ct2(C)を比較Ct法に供して解析し、siRNAのRNAi効果の評価指標となるRQ値を取得した。RQ値とは、キャリブレーションサンプルにおける標的遺伝子のmRNAレベルを1とした時の、評価サンプルにおける標的遺伝子のmRNAレベルの相対値である。具体的には、RQ値は、下記(2)式で定義される。

$$RQ = 2^{(-\Delta\Delta Ct)} \quad \dots (2)$$

ただし、(2)式の $\Delta\Delta Ct$ は、下記(3)式で定義される。

$$\Delta \Delta C t = \Delta C t (E) - \Delta C t (C) \quad \cdots (3)$$

ここで、(3) 式中、 $\Delta C t (E)$ は下記 (4) 式で定義され、 $\Delta C t (C)$ は下記 (5) 式で定義される。

$$\Delta C t (E) = C t 1 (E) - C t 2 (E) \quad \cdots (4)$$

$$\Delta C t (C) = C t 1 (C) - C t 2 (C) \quad \cdots (5)$$

なお、(2) ~ (5) 式における添付記載「1」、「2」、「E」および「C」の説明は、上記の通りである。

6. RNA i 効果の評価

上記のようにして取得した RQ 値を表 1 A-K に示す。表 1 の「遺伝子名」の欄の記載、「refseq_N0.」の欄の記載、「標的配列」の欄に記載された配列において実際に RNA i の標的となる配列、および「標的位置」の定義については、本明細書中、「図面の簡単な説明」の項目において、図 4 6 に関連して前述した通りである。

本実施例においては、上記のようにして算出された RQ 値（表 1 の「RQ 値」の欄参照）に基づいて、各 siRNA の標的遺伝子に対する RNA i 効果を評価した。表から明らかなように、配列番号 817102-817650 中の偶数番号の配列番号の塩基配列を有するセンス鎖と、配列番号 817102-817650 中の奇数番号の配列番号の塩基配列を有するアンチセンス鎖とからなる siRNA では、RQ 値が全て 1 未満、そしてほぼ全てが 0.5 未満となり、よって、これらの siRNA は表 1 記載の標的遺伝子の発現を 50% 以下に抑制すること示された。このような各 siRNA の RNA i 効果は、COS 細胞を用いて上記と同様の操作を行った場合においても実現された。

さらに、用いた 294 種の本発明の siRNA 全てが RNA i 効果を奏するという実施例 8 の結果から、本発明にかかるポリヌクレオチド (siRNA) は、哺乳動物細胞において、標的遺伝子に対して RNA i 効果を有効に奏し遺伝子発現を 50% 以下に抑制することが明らかとなった。

なお、実施例 1-8 においては、センス鎖およびアンチセンス鎖が全て RNA で構成された siRNA を用いる場合を示したが、キメラ構造を有する siRNA を用いた場合においても、上記実施例 1-8 と同様の結果が得られる。siRNA

NAがキメラ構造を有する場合の詳細な説明はここでは省略するが、例えば、実施例8においてキメラ構造のs i RNAを用いた場合、当該s i RNAは、配列番号817102～配列番号817651で示すセンス鎖およびアンチセンス鎖からなる実施例8のs i RNAと以下の点で構成が異なる。

- 5 すなわち、キメラ構造のs i RNAは、表1に示す配列番号817102～配列番号817651で示すセンス鎖およびアンチセンス鎖からなるs i RNAと同様の塩基配列を有するが、センス鎖の3'末端（例えば、表1の配列番号8102記載のセンス鎖ではA）から8～12ポリヌクレオチド（例えば10ポリヌクレオチド、好ましくは11ポリヌクレオチド、より好ましくは12ヌクレオチド）の部分と、アンチセンス鎖の5'末端（例えば、表1の配列番号8103記載のアンチセンス鎖ではA）から8～12ポリヌクレオチド（例えば10ポリヌクレオチド、好ましくは11ポリヌクレオチド、より好ましくは12ヌクレオチド）の部分とがDNAで構成されており、よって、表1に示すセンス鎖およびアンチセンス鎖の塩基配列のうち、当該ポリヌクレオチド部分のUがTに置換された点が、配列番号817102～配列番号817651で示すs i RNAと異なる。
- 10
- 15

表1A

遺伝子名	refseq_ID	RQ	相対位置	標的配列	配列番号	sRNA-センス	配列番号	sRNA-アンチセンス	配列番号
PSEN1	NM_000021.2	0.23	532	tgctcttgcttgactaatgaatca	307985	UUCUGUGUCUUAUUGUACA	817102	ACUUAUUGUAGGACGACGACA	817103
JAG1	NM_0000214.1	0.28	794	cgtccacagctccatctactgttc	147021	GGCGAGGUCUUAUUGUCUG	817104	ACGUUAUAGGACUUGCGCGAG	817105
POLR2A	NM_000897.2	0.34	2425	tctctatcttgaggcttactattt	36223	UACUUAUAGGACUUAUUGU	817106	UACUUAUAGGACUUAUUGU	817107
CD38	NM_001254.3	0.35	383	gtcttgagcgttgataaactatgc	76037	CUGGCGAUGACUACCUUGC	817108	UUGUUGUUGUACUUGCGCGAG	817109
CSE1L	NM_001316.2	0.15	393	ggcattctggttggttcattatgc	128329	GAUUGUGUGGCUUAUUAUAG	817110	UUUAUUGGCUUUGUUGGCG	817111
HDAC2	NM_001927.1	0.15	1110	tgcttgataaacttccatgaigtgc	4714	GCUUAUAGGACUUAUUGU	817112	ACUUAUUGGCUUUGUUGGCG	817113
HIF1A	NM_001530.2	0.2	809	aacttgacccagagagactatga	237	CUAGCGGAGAGACUUAUGA	817114	UUGUUGUUGUUGGCGUGUUGU	817115
IGFBP4	NM_001552.1	0.084	706	aagacatttcgccaataatttcgga	124916	GCACUUGGCGUUAUUAUUGA	817116	UUGUUAUUGGCGUUAUUGU	817117
CD22	NM_001786.2	0.18	656	tgaggttcagcttcgttactcaact	75723	GGUUGUGUGUUAUUGUUAUUG	817118	UUGUUAUAGGACUUAUUGGCG	817119
CDK2	NM_001798.2	0.21	689	tgaggttcgttcttgcttacttca	76134	GAGUUGUUGUUGUUAUUGU	817120	UAGUUAUAGGACUUAUUGGCG	817121
CDK7	NM_001799.2	0.3	575	ggagagcccaataaacttataac	76204	CAGGCGCAUUAUUGUUAUUG	817122	UUAUUGUUAUUGGCGUUGGCG	817123
CUTL1	NM_001913.2	0.36	139	gttcagagagcggatctatgaac	2624	CCAGAAAGCGCUUAUUGGCG	817124	UUGUUAUAGGCGUUAUUGGCG	817125
E2F4	NM_001850.3	0.2	1220	cccgagagaccagatataatct	2919	CGGAGACCAUUAUUGUUAUUG	817126	UUAUUAUUGGCGUUAUUGGCG	817127
GNB1	NM_002074.2	0.072	672	tgctgttgagcttgcttactatctt	192277	CGGUGGCGUUGUUAUUAUUG	817128	UUAUUAUUGGCGUUAUUGGCG	817129
HSPA4	NM_002154.3	0.055	578	agatataaagatgacataatagc	85163	GUUUAUAGGCUUAUUAUUGG	817130	UUAUUAUUGGCGUUAUUAUUGG	817131
KPNA1	NM_002284.1	0.2	520	tctctcttgagcccgatctgta	133261	CUUUGUAGGCGUUAUUAUUGG	817132	UUAUUAUUGGCGUUAUUAUUGG	817133
KPNA3	NM_002287.2	0.074	1921	agagagcttactactatcttctg	177084	CAGUUAUUAUUAUUAUUAUUG	817134	UUAUUAUUGGCGUUAUUAUUGG	817135
KPNA4	NM_002288.3	0.094	1595	tgatctacttgatcttgatctg	289352	GUUUGUAGGCGUUAUUAUUGG	817136	UUAUUAUUGGCGUUAUUAUUGG	817137
PAWR	NM_002693.2	0.21	984	gttgagcttgcttcttgatataacgg	113162	GGGUGGCGUUAUUAUUAUUGG	817138	UUAUUAUUGGCGUUAUUAUUGG	817139
POLD1	NM_002691.1	0.29	2216	ggaggttcgagcgtcagatgacgc	35766	GGUUGGCGUUAUUAUUAUUGG	817140	UUAUUAUUGGCGUUAUUAUUGG	817141
POLR2G	NM_002696.1	0.11	586	tgatcttgcttgatgagcttact	53520	GUUUGUAGGCGUUAUUAUUGG	817142	UUAUUAUUGGCGUUAUUAUUGG	817143
PRKACB	NM_002731.1	0.1	944	ccagcagcttgatcttgatctt	96985	CGUUAUUAUUAUUAUUAUUGG	817144	UUAUUAUUGGCGUUAUUAUUGG	817145
PRKCA	NM_002737.2	0.19	429	tcgcatataagagcttctacagac	3701	GGUUAUUAUUAUUAUUAUUGG	817146	UUAUUAUUGGCGUUAUUAUUGG	817147
MAPK1	NM_002745.2	0.086	383	aggttgatcttgatcttctacagac	89815	GUUUGUAGGCGUUAUUAUUGG	817148	UUAUUAUUGGCGUUAUUAUUGG	817149
MAPK9	NM_002752.3	0.22	261	atcttgatcttgatcttcttctaa	90663	GUUUGUAGGCGUUAUUAUUGG	817150	UUAUUAUUGGCGUUAUUAUUGG	817151
MAP2K1	NM_002755.2	0.21	114	ccccagagcttcgagcttgaagc	88938	CGGAGCGCGUUAUUAUUAUUGG	817152	UUAUUAUUGGCGUUAUUAUUGG	817153

表1B

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sIRIN-センス	配列番号	sIRIN-アンチセンス	配列番号
PSMA2	NM_002787.3	0.022	56	ttacgacctcttgccttaacttgc	185145	GAGCGCGGCGGUAACUUGU	817154	AGUUAUACAGAGCGCGUGAA	817155
PSMA3	NM_002788.2	0.074	599	atgacctgcgctgatactttaa	185178	GCGCGCGGCGGUAACUUGU	817156	AGCAUAUACAGAGCGCGUGAA	817157
PSMA4	NM_002789.3	0.1	183	cttgccttatacgaacttgcataa	185191	GCAGCGCGGCGGUAACUUGU	817158	AUUAUACAGAGCGCGUGAA	817159
PSMA5	NM_002790.2	0.39	107	tacgcacagcgccttaacttctt	185211	GCAGCGCGGCGGUAACUUGU	817160	AGUAUACAGCGCCCGCGUGUA	817161
PSMA6	NM_002791.1	0.07	129	ccgcttttgcacgcacataacac	53530	GGUUAUACAGCGCGGUAACUUGU	817162	UAUUAUACAGCGCGGUAACUUGU	817163
PSMA7	NM_002792.2	0.13	346	cccgatatacgaacttgcataa	185235	GCAGCGCGGCGGUAACUUGU	817164	AGCAUAUACAGCGCGGUGAA	817165
PSMB1	NM_002793.2	0.035	130	tgcgattttgcgcttaacttctt	185241	GCAGCGCGGCGGUAACUUGU	817166	AAUUAUACAGCGCGGUAACUUGU	817167
PSMB2	NM_002794.3	0.66	530	caacttctctgcgacatacaca	185279	GUUAUACAGCGCGGUAACUUGU	817168	UUAUUAUACAGCGCGGUAACUUGU	817169
PSMB3	NM_002795.2	0.063	312	aggttcgcaagatacgaacttata	185290	GUUUAUACAGCGGUAACUUGU	817170	UAUUAUACAGCGCGGUAACUUGU	817171
PSMB4	NM_002796.2	0.052	317	ctctgcgacttgcgcttgcatac	185302	GUUUAUACAGCGGUAACUUGU	817172	AAUUAUACAGCGCGGUAACUUGU	817173
PSMB6	NM_002798.1	0.067	683	ggcttgcgacgaacttgcatac	185333	GUUUAUACAGCGGUAACUUGU	817174	AAUUAUACAGCGCGGUAACUUGU	817175
PSMC3	NM_002804.3	0.089	1197	cgaccttgcacgaacttgcatac	58773	GUUUAUACAGCGGUAACUUGU	817176	AAUUAUACAGCGCGGUAACUUGU	817177
PSMD7	NM_002811.3	0.11	477	ctgcttacttgcgcttgcatac	57203	GUUUAUACAGCGGUAACUUGU	817178	AAUUAUACAGCGCGGUAACUUGU	817179
RAF1	NM_002890.2	0.41	897	ctgcacatacgaacttgcatac	98550	GCAGCGCGGCGGUAACUUGU	817180	AAUUAUACAGCGCGGUAACUUGU	817181
SHC1	NM_003029.3	0.12	601	gcgagctatgccttgcatac	253033	GCAGCGCGGCGGUAACUUGU	817182	AAUUAUACAGCGCGGUAACUUGU	817183
SP3	NM_003111.1	0.4	2324	tgctgcgagcttgcatac	40777	GUUUAUACAGCGGUAACUUGU	817184	AAUUAUACAGCGCGGUAACUUGU	817185
TCF7	NM_003202.1	0.23	92	acgcttgcacgcttgcatac	41352	GUUUAUACAGCGGUAACUUGU	817186	AAUUAUACAGCGCGGUAACUUGU	817187
TEAD4	NM_003213.1	0.16	1386	tgctgcgacttgcatac	13093	GUUUAUACAGCGGUAACUUGU	817188	AAUUAUACAGCGCGGUAACUUGU	817189
TMPO	NM_003276.1	0.14	1609	ctcacataccttgcgcttgcatac	12793	GUUUAUACAGCGGUAACUUGU	817190	AAUUAUACAGCGCGGUAACUUGU	817191
YWHA8	NM_003404.3	0.072	769	caacttgcacacacacacacac	126595	GUUUAUACAGCGGUAACUUGU	817192	AAUUAUACAGCGCGGUAACUUGU	817193
YWHAH	NM_003405.2	0.094	824	caacttgcacacacacacacac	126598	GUUUAUACAGCGGUAACUUGU	817194	AAUUAUACAGCGCGGUAACUUGU	817195
OGT	NM_003605.3	0.16	449	ctgcgaagcttgcatac	134296	GUUUAUACAGCGGUAACUUGU	817196	AAUUAUACAGCGCGGUAACUUGU	817197
PPP2CB	NM_004156.1	0.23	801	caacttgcacacacacacacac	182383	GUUUAUACAGCGGUAACUUGU	817198	AAUUAUACAGCGCGGUAACUUGU	817199
SOY1	NM_004757.2	0.11	305	ctgcgaagcttgcatac	49502	GUUUAUACAGCGGUAACUUGU	817200	AAUUAUACAGCGCGGUAACUUGU	817201
HDAC1	NM_004964.2	0.15	870	tgcttgcgacttgcatac	4872	GUUUAUACAGCGGUAACUUGU	817202	AAUUAUACAGCGCGGUAACUUGU	817203
PSMD5	NM_005047.2	0.15	1476	ctgcgaagcttgcatac	323491	GUUUAUACAGCGGUAACUUGU	817204	AAUUAUACAGCGCGGUAACUUGU	817205

表1C

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sRNA-センス	配列番号	sRNA-アンチセンス	配列番号
CEBPB	NM_005194.2	0.31	1001	atcaacacacagcttcaacagatc	2155	CACAGCGAGAGGAGGACGAG	817205	UCUUGUACUGUGCGUGUGU	817207
EGFR	NM_005228.2	0.27	2387	ccctctcgatctcaaggaattaaag	81171	CCUGCGUACAGAAUUAUACG	817210	UUAUUCUUGUAGUACGCGGG	817209
ELK1	NM_005229.2	0.22	419	ggctcttcttgatctactatgaca	3145	CCUUGCGGAGUACGUAUUGAC	817210	UUAUUCUUGUAGUACGCGGG	817211
EWSR1	NM_005243.1	0.22	631	ctcttaacacagcagctagtatg	5145	CUACACAGCGCGUAGUUUG	817212	UACUAGUGCGCGUGUGAGAG	817213
HOF1	NM_005334.1	0.22	5339	ggcgacacgctcccttactataac	4824	GCACCGUCCGUGUACUACC	817214	UUAUUCUUGUAGCGGCGGCGC	817215
JUND	NM_005354.2	0.22	1053	ctcgcgcttggaaagaagaatga	5612	CGCCGUCGAGGAGAAUGCA	817216	ACUUIUUCUUCUACGCGCGAG	817217
YES1	NM_005433.3	0.1	839	ttcgctcttagagtttaactagg	10753	CGCGUAGUGGUUUAUUGG	817218	UAGUUUAACUUCUAGUGGAA	817219
TAF6	NM_005641.2	0.13	748	ttgacttgcctcttgaagcctaaag	41513	GACUACGCGUAGCGUAAAC	817220	UUAUUCUUGUAGCGGUGUAC	817221
TAF7	NM_005642.2	0.39	1133	cttgcaacacaggaatttctcttc	112459	GGACACCGCAUUCUUCUG	817222	AGAGUUAUUCUUGUUCGAG	817223
PRKCN	NM_005813.2	0.25	3090	acttgcatttgguaaagtttaca	37488	CUCCAUUGGAGACUUAUACA	817224	UACCGUUCUACUUGCGGAGU	817225
PA2G4	NM_005191.1	0.08	752	ggggtacataagattatctctt	165382	GGUACUAGUAGUUAUUGU	817226	UUAUUCUUGUAGCGGUGAGC	817227
TAF10	NM_006284.2	0.13	461	gctctgaacccctcgatatttgc	12455	CUACACCGCAGCUAAUUCG	817228	UAUUCUUGCGGUGUGAGCG	817229
COPS5	NM_006837.2	0.22	726	atctcaatctgggttgatttctatgc	55199	GCUAUCGGGUGUUAUUGC	817230	UAUAGUACCGGUGUGAGCG	817231
STAT1	NM_007315.2	0.21	2177	aaggcgatcttcaatttcaatgc	12048	GGCGCCUACUACUACUUG	817232	AUGUGUAGUAGUAGCGCCU	817233
GALNT1	NM_020474.2	0.092	1203	taaaatttggagatttatctgaca	161846	GUUUAUGGAGUUAUUGCGCA	817234	AGCAUUAUUCUUCUUAUUA	817235
CDKN2A	NM_000077.3	0.16	677	ggcaccacagcagatcaacatgc	219772	CACCAAGGAGUUAUUGUUC	817236	AGGUUACUUCUUCUGGCGC	817237
RB1	NM_000321.1	0.094	2701	accgacgcttctctaaagaag	10143	CGACCGUGUGUACAAAGAG	817238	CUUUUUGAGCAGCGUGUGU	817239
CD44	NM_000610.2	0.16	233	ctggcgagatctgatttggattat	126722	GGCGCAGUAGUUAUUAUUG	817240	AUUCUUAUUGUUCUGGCGAG	817241
COMT	NM_000754.2	0.093	922	ggcaccacatctcaatttcttct	165518	GCACACUACUACUUGUUC	817242	AACGUAUUGUAGUUGGAC	817243
GSTP1	NM_000852.2	0.14	624	tacttgaactctcccaactaagg	216683	CGUACACUCCUCCUACUAGG	817244	AUUGCAGGCGGUGUACUUA	817245
IGF1R	NM_000875.2	0.27	279	tcagcttcatctccagctacttgc	95545	CGUUAUUCGAGUUAUUAUUG	817246	AAGUAGUGGUAUUGUUGUA	817247
ARH4	NM_001664.2	0.098	371	taccagcatctacagtgattact	108327	CCCAGUACCGUUAUUAUUC	817248	UAUUAUUGGUAUUGUUGUA	817249
CTSC	NM_001814.2	0.29	236	gggttccacagcagatctaaact	188860	GUUCCACCGGUGUACUUC	817250	UUGACUUCGCGUGGAGACCG	817251
FN1	NM_002068.1	0.13	473	actttagcacttcttggttcttct	126771	AAAGGAGCGUUAUUGUUGU	817252	AAACCAACGUAUUGUUGU	817253
LGALS1	NM_002305.2	0.047	367	agcttccagatctgataactatc	174842	CUCCACAUUGUUAUUAUUG	817254	AUUGGUAUUGGUGGAGGUG	817255
NRAS	NM_002524.2	0.11	445	cagttctcatcttgagagcaactaca	109675	GUCCGUAUGAGACUUAUACA	817256	UAUUGUUCUUCUACUGGACUG	817257

表10

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sRNA-センス	配列番号	sRNA-アンチセンス	配列番号
PCNA	NM_002592.2	0.087	526	cgatatacttctgacctagattt	34625	GAUACUUGCGGCGUAGUUAU	817258	UAUACUGGCCAAGGUAUCCG	817259
PKM2	NM_002654.3	0.08	565	tctcttactcttactacacttaag	16619	CUUGGCGUACGACACUAAAG	817260	UAUUGUUGUAGGACGACCA	817261
PYXA	NM_002957.3	0.47	1342	tgccttcttacttccctcaatgac	10866	CCGUCUACAGGGGCUCAUAG	817262	AUUGUAGCGCGGACGACCA	817263
ST00A4	NM_002961.2	0.12	152	acctcaataagcagancataag	132174	CUACAAACGACGACUAAAG	817264	UAUUGUUGUAGGUGUAGU	817265
TFAP2A	NM_003220.1	0.37	978	tactgttgcgaacgaaatttcc	546	CGUUGGCGAAACCGAAUUDC	817266	AAAUUUCGDUUCCGACAGUA	817267
EIF3S10	NM_003760.1	0.28	145	ccctcaaacgctcccaacgaatt	55509	CUCAAAAGCGCCACCAAUU	817268	AUUGUGGCGCGGUUUGAGGG	817269
EIF3S9	NM_003751.2	0.12	641	ggacacccagacagcttgaagAAC	51229	GACCCGACCAAGUUGUAGAAC	817270	UUCUACUAGUGUGGUGUUDC	817271
EIF3S8	NM_003752.2	0.1	417	cttaccctagaggaactatctaat	56770	GACGUGGACGAGGACUUAU	817272	UAUAGUACUUCUUAAGGUCAG	817273
EIF3S7	NM_003753.2	0.15	1729	cttgccttccacttgaagacttcc	56765	CGGUGACGACGUAAGCAUUDC	817274	AGUUCUUCACGUGUGUACCGAG	817275
EIF3S4	NM_003755.2	0.12	182	tggtatataacggagacataaag	51220	GUACUACAGGGAACUAAAG	817276	UAUUGUUDCCGUGUGUAGCCU	817277
EIF3S3	NM_003756.1	0.19	601	agaagatgccgttttgtatataa	56655	GAGUGUCGGAUUGUUAUUA	817278	UAUUAUACUACCGCAACUUCU	817279
EIF3S2	NM_003757.1	0.11	46	agccatcttactcgaatttaag	56617	CGGUCUUAUACGCAUUAAG	817280	AAUUCGCGUUAUUGACCGCU	817281
EIF3S1	NM_003758.1	0.16	442	gaccttgaatttaccagaagaac	56505	CGGCAUUAUACGACGAUAC	817282	UCCUGUGGUAUUGGAGGUC	817283
BAG1	NM_004323.2	0.25	697	atggttctccgacttacttattt	129118	GGUUGCGCGGUAUUGUUAU	817284	UAUACUACUCCCGGCAACU	817285
AKT1	NM_005163.1	0.21	239	aacgagaggagacalcaagacc	71961	CGAGGGAGUACUACAGACC	817286	UCUGUUGUACUCCCGCUCU	817287
NDRG1	NM_006096.2	0.074	567	gcttatacttacttacttactt	25682	CUACUACUAAUCCGUAUUDC	817288	AAAUCCAGUUGUAGUAGGUC	817289
TSYG101	NM_006292.2	0.13	943	atggttacccttctttagtcaaga	43049	GGUUAUCCUUAUUGUACUAGA	817290	UAUAGUACGUAUUGUAGUAGC	817291
BRCA1	NM_007294.1	0.22	4329	gaaggatataccttgcacataacc	16042	GGCAUACGACGACUAAUACC	817292	UAUUGUGGACGUAUUDCCUC	817293
NOTCH2	NM_024408.2	0.085	6047	tgcacatccatctacttcttctaga	149219	CAACACGGAUAGUAGUAGUAGA	817294	UAUAGUAGUUAUCCGUAUCCG	817295
ARHC	NM_175744.3	0.11	194	gtcttcttcttacttcttctttaa	108338	CUUGGCGUACGUGUUAUUA	817296	AAAGCAGUAGGCGACGUAAC	817297
BLM	NM_000057.1	0.35	1908	gaagcttlttcaaaagtctttagtt	22786	CGUUDUCCAAAGUUGUUAU	817298	ACUAGUACUUAUUGUAAAGCCUC	817299
GSN	NM_000177.3	0.13	740	gagcatcttgatataagaagactga	113310	GCAAUUGGUAUAGAAUAGA	817300	AUUCUUAUUAUACCGUAUCCUG	817301
MLH1	NM_000249.2	0.19	847	aaccatctcttcttgatcaaac	91691	CGAUUGUUGGUAUAGUACUAC	817302	UGAUUUCUACGACGAUUGUU	817303
MSH2	NM_000251.1	0.14	1282	accgacttcttctttaggttataat	16366	CGAUUUAUACGUAUUGUUAUUA	817304	UAUUAUACCGUAGUAGUAGGUC	817305
SOD1	NM_000454.4	0.097	343	tgttcttgcctatgttcttctatg	167035	GUUGGCGUACGUAUUGUUAUUC	817306	AUAGACGUAUUGGCGACCA	817307
TOP2A	NM_001057.2	0.24	2525	cttctttagtccacatacattt	41581	CGUACUCCGACUACUUAUUA	817308	AGAUUGUUGGUGGAGUAGCAG	817309

表1E

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	sRNA-センス	配列番号	sRNA-アンチセンス	配列番号
TOP2B	NM_001066.2	0.11	1011	aggatggagccgcctgcatatg	42475	GUAGAGCCGACGCGUAGUUG	817310	UAUUGCAGCGGCGUCCACCU	817311
TUBG1	NM_001070.3	0.11	603	tttgttttcagccttgatctt	111063	GGUGGCGCGGCGUCCAUUUC	817312	UAGUAGAGCGGCGUCCACCAAC	817313
SLC25A5	NM_001116.1	0.035	670	tttgttttcagccttgatctt	181777	CGAGUAGCGGCGUCCAGACAU	817314	UGUUGUUGGCGUCCAGGACGA	817315
ANXA11	NM_001157.2	0.17	1685	cacgcacatctcgagagcttct	128933	CGACUAGCGGCGUCCAGUUC	817316	AGUAGUUGCGGCGAGUUGUGU	817317
AP2B1	NM_001282.1	0.19	714	ttcgcttgcgccttatcttgaaa	273115	CCGUAAGCGGCGUCCAUUGAAA	817318	UCAGUAAUGCGGCGUAGGGCA	817319
GTF2I	NM_001518.2	0.37	978	atctcttcagccttgatcttct	4595	CGUACAGCGGCGUCCAUUUCU	817320	UAUUAUUGCGUCCUUGACAU	817321
IGFBP7	NM_001553.1	0.045	488	ttcgagcagccttcttcaatg	124915	CGACGAGCGGCGUCCAUUGU	817322	UAUUGAGCGGCGUCCUUGCGCA	817323
AXIL	NM_001699.3	0.14	1857	aaagagagagaccctttatggaaa	73357	GAAGAGAGCGGCGUCCAGUAGA	817324	UCCAAUACCGGCGUCCUUCUU	817325
CAPG	NM_001747.1	0.17	790	tttgttcagccttgatcttcaatg	113927	CGCAGCGGCGUCCAUUUGGCUU	817326	ACCUUAUACAGCGUCCGGCC	817327
DUT	NM_001948.2	0.16	419	ttcgagcagccttcttctcaga	165380	CGAAUAGCGGCGUCCAUUUGCA	817328	UGGUAUAAAUUCGCUUCCGA	817329
JUP	NM_002230.1	0.18	1133	atctctttgttccgcacatgaac	120947	CGGUGUGCGGCGUCCAGAAUAGC	817330	UAUUGUUGGCGUCCAGUAGCG	817331
KPNB1	NM_002295.4	0.043	2885	tttgttcagccttgatcttcaacaa	157008	CGAGUAGCGGCGUCCAUUAGCA	817332	UGUAGUUGCGGCGUCCUCCGC	817333
MYH9	NM_002473.3	0.12	465	tttgttcagccttgatcttcaatg	32428	CGCGUAGCGGCGUCCAGUAGCC	817334	AUCAAUCCCGGCGUCCAGCGG	817335
PFN2	NM_002698.2	0.08	82	tttgttcagccttgatcttcaatg	118724	CGUAGCGGCGUCCAGUAGUCC	817336	UAUUGCGGCGUCCAGUAGCG	817337
PPPTCA	NM_002705.2	0.081	239	tttgttcagccttgatcttcaatg	162170	CGAGUAGCGGCGUCCAGUAGCA	817338	UAUUGCGGCGUCCAGUAGCG	817339
PPP1CB	NM_002709.1	0.15	1028	tttgttcagccttgatcttcaatg	162204	CGUAGCGGCGUCCAGUAGUCC	817340	UAUAGCGGCGUCCAGUAGCG	817341
PPP1OC	NM_002710.1	0.32	1084	tttgttcagccttgatcttcaatg	162234	CGCGUAGCGGCGUCCAGUAGCA	817342	AUCAAUCCCGGCGUCCAGUAGCG	817343
THBS1	NM_003246.2	0.28	3224	tttgttcagccttgatcttcaatg	153751	CGGAAAGCGGCGUCCAGUAGU	817344	UAUAGCGGCGUCCAGUAGCG	817345
TTG1	NM_003314.1	0.16	879	tttgttcagccttgatcttcaatg	136559	CGGAGCGGCGUCCAGUAGU	817346	UAUAGCGGCGUCCAGUAGCG	817347
TXNRD1	NM_003330.2	0.15	1777	tttgttcagccttgatcttcaatg	167072	CGUAGCGGCGUCCAGUAGU	817348	UAUAGCGGCGUCCAGUAGCG	817349
VIL2	NM_003379.3	0.078	458	tttgttcagccttgatcttcaatg	282159	CGUAGCGGCGUCCAGUAGU	817350	UAUAGCGGCGUCCAGUAGCG	817351
VIM	NM_003380.1	0.073	1447	tttgttcagccttgatcttcaatg	287381	CGUAGCGGCGUCCAGUAGU	817352	UAUAGCGGCGUCCAGUAGCG	817353
EXO1	NM_003686.3	0.25	1631	tttgttcagccttgatcttcaatg	26520	GAACGAGCGGCGUCCAGUAGU	817354	UAUAGCGGCGUCCAGUAGCG	817355
RUVBL1	NM_003707.1	0.085	215	tttgttcagccttgatcttcaatg	100083	CGUAGCGGCGUCCAGUAGU	817356	UAUAGCGGCGUCCAGUAGCG	817357
ADAM9	NM_003816.1	0.15	105	tttgttcagccttgatcttcaatg	155099	CGCAGCGGCGUCCAGUAGU	817358	UAUAGCGGCGUCCAGUAGCG	817359
TNFRSF10B	NM_003842.3	0.41	945	tttgttcagccttgatcttcaatg	127913	CGGCGGCGUCCAGUAGU	817360	UAUAGCGGCGUCCAGUAGCG	817361

表1F

遺伝子名	refseq_ID	RQ	標的位置	細配列	配列番号	sRNA-センス	配列番号	sRNA-アンチセンス	配列番号
SHMT1	NM_004169.3	0.12	975	gcgcagatgcgcagatctctac	214653	CGACGCGGCAAGCAUCUAC	817362	AGAGCAUGCGGACGACGCGC	817363
CAD	NM_004341.2	0.36	5394	atggcgaagatgcccttatatcagc	74903	GGAGCGGCGUUAUUAUUAUAC	817364	UUCGAUAAGGCAACUCCGCC	817365
CSK	NM_004383.1	0.22	1132	ggcgcacatgcgcacatgcacac	71829	CGCAUUCGCGCAUACACCC	817365	UUCGUUUCGCGCAUUGGCG	817367
XPC	NM_004628.3	0.31	584	tgcgaagccgcagaaacttttc	17754	CGGAGCGCGCAAGAACUUC	817368	ACCUUUCUACGCGCGCGCAA	817369
HGS	NM_004712.3	0.35	1883	cccaatgcgcgcgcgtgcacatga	157053	CAUUGCACGCGGCUAGCAUGA	817370	UACUACACGCGCGCGUAGGG	817371
CALX3	NM_005184.1	0.16	1426	gtgtctcttttaggcctatgcagtc	48465	GUCCUUAAGGCAUACUAGUG	817372	UACAUUUGCGCUAAGGACAC	817373
LRRFP1	NM_004735.2	0.093	538	cagcttcattatgaagatgttct	129555	GGUCAAUUUAGAGCAUUUUU	817374	AAACUUCUCAAUAUUGACUUG	817375
DIAPH1	NM_005219.2	0.2	885	cagcgcgtgcgtgcgtgcgtgcgt	116504	GGCCGCGCGCGGAGUUAUAA	817376	UAUUAUUCUCCAGGACGCGUG	817377
NCL	NM_005381.2	0.036	1276	gacgcgaatgcgcgaatcatttt	33529	CGGAGUUGCGGACACAUUUU	817378	UAGUUGUUGCGCAUUCUGUC	817379
TGB1	NM_005749.2	0.097	588	accgaattgcgccttaccacatt	136820	CAUUGCGCGGCUUCCMAAUU	817380	UUUGGAGUAGCGGCAUUGGU	817381
MADH2	NM_005901.2	0.088	1456	aagcgcgtctatcagcttactaga	133708	GGCCUUAUACAGUUAUUGGA	817382	UAGUUGAGUAGCGGACUGUU	817383
GNB2L1	NM_006098.3	0.16	380	ccccaccacagacgaatttgcg	125242	CGCACGCGCGCGUUAUUGG	817384	ACAAGCCGCGUUGGUGUGUG	817385
PPPR5A	NM_006243.2	0.18	890	gagtatatttctaacattatgcg	298747	GUUUGUUAUUAUUAUUCGCG	817386	ACGAUAGUUAAGCAUAUUC	817387
HYOU1	NM_006389.2	0.1	427	tccaagcttacccttacccttact	85421	CAAAAGGCGCGUUAUUGUUA	817388	UACGUGCGGCGUAGUUGGA	817389
KHDRBS1	NM_006559.1	0.15	1248	aagccttaccagcatttaccgc	19823	GGUACGCGCGUUAUUAUUG	817390	UGUAUAGCCUUCUUGUAGUUG	817391
MEI2P2	NM_006838.2	0.084	738	atcccttcagcaccacagattata	166558	GGCGUGGACCAACAGUUAUA	817392	UAUUGUUGUUGCAACGCGCAU	817393
CALM1	NM_006888.2	0.4	519	tacccttccttccttcagcactta	129581	GGUACGCGCGUUAUUAUUG	817394	AGUUGUUGCAUGCAUGUAGUUA	817395
TOPBP1	NM_007027.2	0.3	1047	atgcgaatttgccttaagtgcattca	126586	GGCAUUGGCGUUAUUGAUAUA	817396	AUUCACUUAACCAUUAUUGCAU	817397
PIAS1	NM_016166.1	0.37	1704	gcccttaccgcttaccaggaattag	35123	CUAAUGCAUUAUUAUUGAUAUG	817398	AUUCUUGUUGUUGUUAUUGG	817399
NMT1	NM_021079.3	0.25	1025	ccttcagcttaccgacaaatgcgaaca	215454	GGCGUUGCGCGUUAUUAUUA	817400	UUUCCAUUGGUGCGCGCGAG	817401
PPPR4	NM_021191.3	0.28	332	cgccttacccttaccaggaattcctc	298444	CGGCAUUAUUAUUAUUAUUAU	817402	AGUUAUUGCAUUGUAGUAGG	817403
MSH6	NM_000179.1	0.17	3185	tgcgcgcacgtcttaccattt	16719	CGGCAUUAUUAUUAUUAUUAU	817404	AGUUAUUGCAUUGCGCGCA	817405
EIF4A1	NM_001416.1	0.16	463	tgcgccttgccttgccttgccttgc	25763	GGCGUUGGUGUUAUUAUUAUUA	817406	AGCAUUAUUAUUAUUAUUAUUA	817407
ATP2A2	NM_001681.2	0.2	2836	atcccttacccttaccgacatgcacatgc	72769	CCGCAUUAUUAUUAUUAUUAU	817408	AUUCUUAUUAUUAUUAUUAUUA	817409
HNRPK	NM_002140.2	0.24	458	ccccccgcgaatttgcgttgc	28586	CGGCGCAUUAUUAUUAUUAUUA	817410	AUUCGCAUUAUUAUUAUUAUUA	817411
MSN	NM_002444.2	0.058	1806	taccgaatttgcgaatttgcgttgc	287504	CGCAUUAUUAUUAUUAUUAUUA	817412	AGUCAAUUAUUAUUAUUAUUAUUA	817413

表11

遺伝子名	refseq_ID	RQ	標的位置	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
ADD1	NM_001119.3	0.14	255	aggctacttcagcagcagataga	115154	GUACUACCCAGCAGUAGUA	817519	AUCGACUCGUGGCGAAGUCCU	817519
FLNA	NM_001456.1	0.13	4957	aacccttgcagcagcttctacgt	114101	CCAGUACGGCAGCAUAGUAC	817520	UUUUAUUGUCGCGUCCUAGGUU	817521
IL13RA1	NM_001560.2	0.077	497	acccttgcagcagcttctacgt	244096	CAGUCCGACAGCAUAGUAC	817522	UAUAGUUGUCGCGUCCUAGGUU	817523
IL18	NM_001562.2	0.19	679	ttcatatagagagatactttc	167283	CACUACGCAAGUAGUACUCC	817524	AUAUUCUUCUUGUAGUAGUA	817525
ARF6	NM_001663.2	0.32	730	gcgcctcttcggcgatctacta	108231	CUCUCCGCGCGGGAUACUACA	817526	UAGUUAUUGCCGCGAGCGGC	817527
ITGB4BP	NM_002212.2	0.13	82	gagcttcttcgagancactt	56942	GCUUUUCUUGCAGACACUUGU	817528	AGUUUUCUUGCAGACGACUCC	817529
MYBL2	NM_002466.2	0.093	975	caggagcccttcagctacagatct	7221	GGAGCCUACCGUAGACACUUGU	817530	AUUCUUGUACGAGUGGUGUCCG	817531
NME2	NM_002512.1	0.045	485	aac tgg tgc tacc aat tct t	8178	CUGUUGUACUACAUGUUGU	817532	UAGUUGUACUACAUGUUGU	817533
RAP1A	NM_002884.1	0.072	529	aaagacgcagcagagtttgcact	110570	GAACGCCAGCGUUGUUGU	817534	UGCAAAACUUGUCCGCGUCCU	817535
RPA2	NM_002946.3	0.15	289	aacat tga t tgc aat t a t g	19817	CAGUGGACUAGCGUUGUUGU	817536	AUAGUUGUACGAGUCCACUUGU	817537
SDC2	NM_002998.3	0.27	1182	aggcctcttcagagattttat	121066	GCACUACUACGAGUUGUUGU	817538	AAACUUCUUGUAGUUGUCCU	817539
SDC4	NM_002999.2	0.14	338	ccacacacacacacacacacacac	121072	CACCGACCGCAGCAUUGU	817540	UAGUUGUUGGUGUUGUUGG	817541
TCF12	NM_002905.2	0.17	1972	tcct t t a c c t t c c g g a t t a a	41688	CUACCGUCCGCGGUAUUGU	817542	AUAUUCUUGGUGUUGUUGG	817543
TM6P1	NM_003254.1	0.12	364	accgacgcagagagatttctact	186307	CCGACGAGAGUUGUUGUUGU	817544	UGAGAUCUUGGUGUUGGUGU	817545
TRA1	NM_003299.1	0.22	827	t a g e c a c c a c c a c c a t t a c c	102862	GCACCGGACCGCAGUUGU	817546	UAUUGUUGUCCGCGUCCU	817547
VCL	NM_003373.2	0.09	211	ttcttgccttctctcttctact	120554	CUCGCGUCCGCGUUGUUGU	817548	UAGUUGUUGGUGUUGGUGU	817549
CXCR4	NM_003467.1	0.37	90	tggaggagtcagttatctact	124591	GAGUGGACUAGUUGUUGU	817550	UGUUAUUGUACUUGUCCU	817551
SUCLG1	NM_003849.1	0.5	127	ttctgcgcacatctcttcttctg	110935	CUCGCGACUUGUUGUUGU	817552	ACAUAAGUUGUCCGCGU	817553
MBD2	NM_003927.3	0.1	902	ctcgaacacatctcttcaatca	20354	CGCAACUACUUGUUGUUGU	817548	UAGUUGUUGGUGUUGGUGU	817549
USP13	NM_003940	0.19	2338	ggcacttgcagcagcagatata	154317	CACUCCAGCAGCAUUGU	817554	AUUGAGAGUUGUUGGUGU	817555
OSMR	NM_003989.1	0.31	3240	ctccctccacacagagatagac	34501	CCCGCGACCGCAUUGUUGU	817556	UUAUUGUUGGUGUUGGUGU	817557
GNFIB	NM_004124.2	0.12	290	gaaacacttcttcttcttctt	117415	CCCGCGUUGUUGUUGUUGU	817558	UGCUUUCUUGGUGGUGU	817559
EPHA2	NM_004431.2	0.29	1535	gttggagttacagagcttcttacc	81348	GGAGUCCAGCGUACUUGU	817562	UAGUGUACCGUUGUUGU	817563
USP11	NM_004651.2	0.089	643	tttgcagatcttcttcttctt	188785	CACGACUUGUUGUUGUUGU	817564	AUAUACUUGUUGUUGU	817565
USP9X	NM_004652.2	0.057	3790	gttggagttacagagcttcttacc	190527	GGGUGUUGUACUUGUUGU	817566	UAUUAUUGUUGUUGUUGU	817567
USP14	NM_005151.2	0.1	583	tgccttgcagcagatatttact	188886	CCUUGACCGCAGUUGUUGU	817568	UUAUUAUUGUUGUUGUUGU	817569

表1.1

送伝子名	refseq_ID	RQ	推定位置	標的配列	配列番号	sRNA-センス	配列番号	sRNA-アンチセンス	配列番号
USP10	NM_005153.1	0.22	1353	ccctcctgacgtacgaataaag	188770	CGUUGGCGUACUUAUAGG	817570	UUUAUGAUGACCCAGGGG	817571
USP8	NM_005154.2	0.22	3283	ggctctacgaagatctctaaag	190459	CGUACCGGAUUUUUAAA	817572	UUAGAGAUUCCGUAUGGAC	817573
SDCBP	NM_005295.3	0.13	2559	ggctatctctcagatctgaagatc	114865	CUAUCCUACUAGGUAUUC	817574	UUUCCUACUAGGUAUGAG	817575
CAPZA1	NM_006135.1	0.16	101	atagcgttgcgtactactaaat	113971	GACUGUGGCUUACUUAU	817576	UUAAGUAGUAGCCGACUUAU	817577
CAPZA2	NM_006136.2	0.15	782	gacatgttgcgtactacttctca	114011	CAUUGUGGCAUUGUUAU	817578	AAAGUAGUAGUCCGUAUUC	817579
NFE2L2	NM_006164.2	0.21	324	ttctccttgcgttactacttctca	7735	CGUACUACUACUUAUAG	817580	AUCUAGUUGUUAUAGUAGC	817581
USP16	NM_006447.1	0.19	1205	ggatgtgaactactactacttca	189079	GUUGUAGUACUUAUAG	817582	AUAGUUGUUGUUAUAGC	817583
LIM	NM_006457.1	0.19	1333	cttcgaatgcgtcgtacttctca	125275	CGUAGUUGGCUUUAUAG	817584	UACAUUGGCGUACUUAUAG	817585
ADD3	NM_016824.1	0.14	1732	gacatctgcagacttaacacag	121238	CAUUGGCAUACUUAUAG	817586	UGUUGUUAUAGUUAUAGC	817587
MAP2K2	NM_030682.2	0.16	670	gtacagggagatcagactttctc	88955	CACGGGCAUACUUAUAG	817588	UAGUUGUUAUAGUUAUAGC	817589
ADH5	NM_000671.2	0.11	685	ggcatcttcaagcttgaatggctc	155944	CAUUAUACCGUUAUAGC	817590	UCCUUAUAGUUAUAGC	817591
ANXA1	NM_000700.1	0.11	946	cttcctcttaagacttgaatcag	137873	CGCCUUAAGCCUUAUAG	817592	UAGUUAUAGUUAUAGC	817593
FOLR1	NM_000802.2	0.32	259	ttctactatatagttcaactt	179653	CGUACUUAUAGUUAUAG	817594	UUAUUAUUAUAGUUAAG	817595
POLR2B	NM_000938.1	0.16	2680	ccctctctgaatctacttctga	36387	CUUCCUUAUAGUUAUAG	817596	UCCUUAUUAUAGUUAAG	817597
CRIP2	NM_001312.2	0.25	90	gtccgacaaagcgttgttcttgc	156364	CGCACAAGCCUUAUAGC	817598	AGUACACCGGUUAUAGC	817599
POLR2C	NM_002694.2	0.11	153	ttcgaatttcgaagcttcttctgc	36408	CGUUGGCGUUAUAGC	817600	UAGUUAUAGUUAUAGC	817601
POLR2E	NM_002695.2	0.098	40	ggcgtacgtcgtcttggaataatc	36425	CGUACCGGUUAUUAUAG	817602	UUUUAUUAUAGUUAUAGC	817603
RFC3	NM_002915.2	0.38	120	tgagagcgttggaactatacag	38420	GGACGGGCGUUAUAGC	817604	UGUUAUUAUAGUUAUAGC	817605
RFC4	NM_002916.3	0.19	957	ttcgaagcctctctcgaataaag	38465	CAUAGGCGUUAUUAUAG	817606	UUAUUAUUAUAGUUAUAG	817607
SSB	NM_003142.2	0.1	276	aggttggaactcgtcttacaacaga	48020	GUUAGCCGUUAUUAUAG	817608	UGUUAUUAUAGUUAUAGC	817609
HSPA9B	NM_004134.4	0.19	948	ggccttctcttggaacttcttgaat	65288	CGUUGGCGUUAUUAUAG	817610	UUAUUAUUAUAGUUAUAG	817611
FANCG	NM_004629.1	0.28	1405	ctctcttggttggaacttcttgaat	16716	CGUUAUAGGCGUUAUAG	817612	UUUAUUAUUAUAGUUAUAG	817613
POLR2K	NM_005034.2	0.17	182	gttgttacaataaataatgataag	36435	CGUUAUUAUUAUUAUAG	817614	UGUUAUUAUUAUUAUAG	817615
PRCP	NM_005040.2	0.043	970	tggaatgttggaactatcttctat	187207	CGUUAUUAUUAUUAUAG	817616	UUAUUAUUAUUAUUAUAG	817617
HSPA5	NM_005347.2	0.21	1292	gttctctcacttcgaatttcaag	85334	CGUUAUUAUUAUUAUAG	817618	UUAUUAUUAUUAUUAUAG	817619
POLR2H	NM_006232.2	0.099	282	gttgtatgacttgttcttcttga	159134	CUUAGGCGUUAUUAUAG	817620	UUAUUAUUAUUAUUAUAG	817621

表 1K

遺伝子名	refseq_ID	RQ	標的位型	標的配列	配列番号	siRNA-センス	配列番号	siRNA-アンチセンス	配列番号
POLR2L	NM_006233.4	0.11	145	agccgttcaggagactgtagttac	9802	GCCTCCGCGAAGCAGGCAUUAAC	817622	AUACACAGUUCGCGCAGCGGU	817623
POLR2J	NM_006234.3	0.15	359	ggcgttttcaggtagccttaaaag	36430	GCCTUUCGGGUGGCGCAUAAAG	817624	UUUAUGGCCACCGCAAGAGCC	817625
RFC5	NM_007370.3	0.23	941	agagcgttcaggtagcgtatc	38487	GGGUGGCCAGUCGCAUUAUC	817635	UAUACAUGCAGUGCCACACCCCU	817627
TGFB1H	NM_015927.3	0.16	532	ggcttccgttcagtaaacatct	172567	TCUUCGCGGCUCAAAACCAUUC	817628	AUGGCUUUGAACCGCGGAAGUC	817629
PRKWNK1	NM_018979.1	0.1	631	ggccttgggaatcttcaacpaleg	97669	CGUGGAGAGUUCUACGAGUG	817630	AUCGCUUAGCAUUCGCACGGC	817631
POLR2F	NM_021974.2	0.052	105	tagccagcagcttttagtagttag	36427	GCACGCAUUCUUAUGAGUUGG	817632	ACAUCAUCAAAGACGUCGCGCA	817633
NME1	NM_000269.2	0.045	185	agcgttttcaggcagaagaatc	94844	CGUUUUGAGCAAGAAGUUC	817634	AUCCUUCUUGGCUCAAAGCCU	817635
PEA15	NM_003768.2	0.15	405	ccgttcctgcacttacttacttag	134551	GUCCGUCUUAUACUUAUUG	817636	AUAGUGAGUGUGCAGCAGCG	817637
ARHGDI4	NM_004309.3	0.17	436	ttccggctttagcggagagtagt	129087	CCGCGCUAACCGGACGAUUGU	817639	UAUCUUCUGGDUUACCGGAA	817639
ESRRA	NM_004451.3	0.3	1029	agccttctgcaggagacttagctc	3459	CCUUCGCGUAGAGCAUUAUUC	817640	ACUUAUGUCUACGCGCAAGCC	817641
CAV1	NM_001753.3	0.13	702	cagttcacttcccgctgcttctc	289919	GUCAUAGCCGUGUGUAUUC	817642	AUAGACACGGGUGAUGCAGU	817643
INK67	NM_002417.2	0.17	556	cagcttagtcttcaagatcttagc	91937	CGGUGUUCUUAAGAUAUUC	817644	UAGAUAUUCGAGACACGAGUG	817645
CDKN1B	NM_004084.2	0.41	929	ctgcagccagcagcttcttctact	219567	GCACCGCAGUUCUUCUUAUC	817646	UAGAGAUUUCUGUUGUCAG	817647
ERBB2	NM_004448.1	0.17	3386	aagggccttagcttccgagtagttt	81940	GGGCGUGGUCUCGUAUUAUUC	817649	AUACUUCGAGCGAGCGCCCUU	817649
MXI1	NM_005962.2	0.14	920	caacacgacttccgagtagtttag	33013	CAGCAGCGUCCGCAUUAUUG	817650	AUAUCUUCGCGAGCGUCUGUG	817651

産業上の利用の可能性

以上のように、本発明にかかるポリヌクレオチドは、標的遺伝子に対して高いRNA干渉効果を有するとともに、標的遺伝子と関係のない遺伝子についてRNA干渉を生じる危険性が非常に小さいため、発現を抑制しようとする標的遺伝子のみに特異的にRNA干渉を生じさせることができる。したがって、本発明は、RNA干渉を利用する試験、治療方法等に好適に利用することができ、哺乳類などの高等動物、特にヒトを対象とするRNA干渉を行う際に特に有効性を発揮するものである。

なお、本出願の配列表は817651個の配列の情報を含む。電子ファイルの容量が余りに大きく(200MB近く)、コンピュータ環境によっては作業が著しく困難、または不可能になるため、便宜上電子ファイルを2つに分けた。YCT1039 sequence listing(1)は、書誌事項と配列番号1ないし70000の情報を、YCT1039 sequence listing(2)は、配列番号700001ないし817651の情

請求の範囲

1. 目的生物の遺伝子の中から選ばれる標的遺伝子について、RNA干渉を生じさせるポリヌクレオチドであって、

5 少なくとも2本鎖領域を有し、

前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(d)の規則:

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり;

(b) 5'末端の塩基が、グアニンまたはシトシンであり;

10 (c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上の塩基がリッチであり;

(d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であるに従う規定配列と相同な塩基配列からなり、そして

15 前記2本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなることを特徴とするポリヌクレオチド。

2. 前記規定配列と相同な塩基配列の少なくとも80%以上の塩基が、前記規定配列の塩基配列と一致することを特徴とする請求項1に記載のポリヌクレオチド。

20 3. 前記規則(c)において、7塩基のうち少なくとも3塩基以上がアデニン、チミンおよびウラシルからなる群より選ばれる1種または2種以上であることを特徴とする請求項1または2に記載のポリヌクレオチド。

4. 前記規則(d)において、塩基数が13~28であることを特徴とする請求項1~3のいずれか一項に記載のポリヌクレオチド。

25 5. 前記規定配列が、さらに下記(e)の規則:

(e) 10塩基以上グアニンまたはシトシンが連続する配列を含まないに従う配列であることを特徴とする請求項1~4のいずれか一項に記載のポリヌクレオチド。

6. 前記規定配列が、さらに下記(f)の規則:

(f) 目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と90%以上の相同性を有する配列が含まれないに従う配列であることを特徴とする請求項5に記載のポリヌクレオチド。

7. 前記規定配列が、配列表配列番号47～配列番号817081のいずれかに記載の塩基配列からなることを特徴とする請求項6に記載のポリヌクレオチド。

8. 前記規定配列が、図46の標的配列の欄に記載された配列であることを特徴とする請求項6に記載のポリヌクレオチド。

9. 配列番号817102ないし817651のいずれかの塩基配列を有することを特徴とする請求項6に記載のポリヌクレオチド。

10. 2本鎖ポリヌクレオチドであることを特徴とする請求項1～9のいずれか一項に記載のポリヌクレオチド。

11. 前記2本鎖ポリヌクレオチドの一方の鎖が、前記規定配列と相同な塩基配列の3'末端にオーバーハング部を有する塩基配列からなり、

15 前記2本鎖ポリヌクレオチドの他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列の3'末端にオーバーハング部を有する塩基配列からなることを特徴とする請求項10に記載のポリヌクレオチド。

12. ヘアピン構造を有する1本鎖ポリヌクレオチドであり、

20 前記2本鎖領域における一方の鎖の3'末端と、前記2本鎖領域における他方の鎖の5'末端とを連結するループ部を有することを特徴とする請求項1～9のいずれか一項に記載のポリヌクレオチド。

13. 発現を抑制しようとする標的遺伝子の発現系に導入するポリヌクレオチドの選択方法であって、

少なくとも2本鎖領域を有し、

25 前記2本鎖領域における一方の鎖が、標的遺伝子の塩基配列中に含まれる、下記(a)から(f)の規則：

(a) 3'末端の塩基が、アデニン、チミンまたはウラシルであり；

(b) 5'末端の塩基が、グアニンまたはシトシンであり；

(c) 3'末端の7塩基の配列において、アデニン、チミンおよびウラシルから

なる群より選ばれる１種または２種以上の塩基がリッチであり；

(d) 塩基数が、細胞毒性を生じさせずにRNA干渉を生じさせ得る数であり、；

(e) １０塩基以上グアニンまたはシトシンが連続する配列を含まず；

- (f) 目的生物の全遺伝子配列のうち、標的遺伝子以外の他の遺伝子の塩基配列中に、当該規定配列と９０％以上の相同性を有する配列が含まれない
5 に従う規定配列と相同な塩基配列からなり、そして、

前記２本鎖領域における他方の鎖が、前記規定配列と相同な塩基配列と相補的な配列を有する塩基配列からなるポリヌクレオチドを選択することを特徴とするポリヌクレオチドの選択方法。

- 10 14. 前記選択したポリヌクレオチドから、さらに、前記標的遺伝子の規定配列と相同な塩基配列が、前記標的遺伝子以外の他の遺伝子の塩基配列とのミスマッチ数が少なくとも３塩基であり、かつ、当該少なくとも３塩基のミスマッチを有する塩基配列を有する他の遺伝子の数が最も少ない配列であるポリヌクレオチドを選択することを特徴とする請求項１３に記載のポリヌクレオチドの選択方法。
15

15. 請求項１～１２のいずれか一項に記載のポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制すること
を特徴とする遺伝子発現抑制方法。

16. 請求項１３または１４に記載の方法により選択されたポリヌクレオチドを、発現を抑制しようとする標的遺伝子の発現系に導入して標的遺伝子の発現を抑制することを特徴とする遺伝子発現抑制方法。
20

17. ５０％以下に発現を抑制することの特徴とする請求項１５または１６に記載の遺伝子発現抑制方法。

18. 医薬的に有効な量の、請求項１～１２のいずれか一項に記載のポリヌクレオチドを含む、医薬用組成物。
25

19. 図４６の関連疾患名の欄に記載の疾患を治療または予防するための、請求項１８に記載の医薬用組成物。

20. 図４６の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予防するための、請求項１８に記載の医薬用組成物。

21. 以下1) - 9) のいずれかに属する遺伝子が関与する疾患を治療または予防するための、請求項18に記載の医薬組成物

1) アポトーシスに関与している遺伝子;

2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子;

5 3) 細胞周期に関与している遺伝子;

4) レセプターに関与している遺伝子;

5) イオンチャネルに関与している遺伝子;

6) シグナル伝達系に関与している遺伝子;

7) キナーゼおよびキナーゼ活性に関与している遺伝子;

10 8) 転写制御に関与している遺伝子;あるいは

9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

22. 図46の配列番号(ヒト)または配列番号(マウス)の欄に記載の配列番号のいずれかの塩基配列を標的配列とするポリヌクレオチドを含む、請求項1

15 8ないし21のいずれか一項に記載の医薬組成物。

23. 表1の遺伝子名の欄に記載された遺伝子に関連する疾患を治療または予防するための、請求項18に記載の医薬組成物。

24. 膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膵癌、前立腺癌、口腔癌、皮膚癌並びに甲状腺癌から選択される、いずれかの癌
20 を治療または予防するための、請求項18または23に記載の医薬組成物。

25. 配列番号817102ないし817651のいずれかの塩基配列を有するポリヌクレオチドを含む、請求項18、23または24のいずれか一項に記載の医薬組成物。

26. 請求項1~12のいずれか一項に記載のポリヌクレオチドを含む、標的
25 遺伝子の発現を抑制するための遺伝子発現抑制用組成物。

27. 標的遺伝子が、図46の関連疾患名の欄に記載の疾患のいずれかの疾患に関連する、請求項26に記載の遺伝子発現抑制用組成物。

28. 標的遺伝子が、図46の遺伝子名の欄に記載された遺伝子のいずれかである、請求項26に記載の記載の遺伝子発現抑制用組成物。

29. 標的遺伝子が、以下1) - 9) のいずれかに属する遺伝子である、請求項26に記載の記載の遺伝子発現抑制用組成物

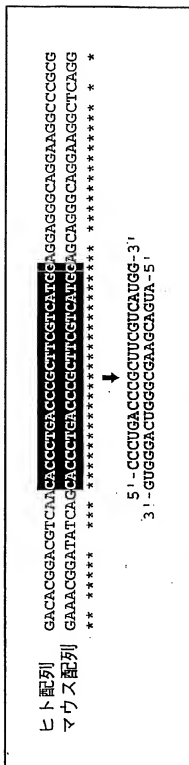
- 1) アポトーシスに関与している遺伝子；
- 2) ホスファターゼおよびホスファターゼ活性に関与している遺伝子；
- 5 3) 細胞周期に関与している遺伝子；
- 4) レセプターに関与している遺伝子；
- 5) イオンチャネルに関与している遺伝子；
- 6) シグナル伝達系に関与している遺伝子；
- 7) キナーゼおよびキナーゼ活性に関与している遺伝子；
- 10 8) 転写制御に関与している遺伝子；あるいは
- 9) Gタンパク質共役レセプターまたはGタンパク質共役レセプターに関与している遺伝子。

30. 標的遺伝子が、表1の遺伝子名の欄に記載された遺伝子のいずれかである、請求項26に記載の遺伝子発現抑制用組成物。

15 31. 標的遺伝子が、膀胱癌、乳癌、結腸直腸癌、胃癌、肝細胞癌、肺癌、黒色腫、卵巣癌、膵癌、前立腺癌、口腔癌、皮膚癌並びに甲状腺癌から選択される、いずれかの癌に関連する遺伝子である、請求項26に記載の遺伝子発現抑制用組成物。

32. 医薬的に有効な量の、請求項1～12のいずれか一項に記載のポリヌクレオチドを投与することを含む、図46の関連疾患名の欄に記載の疾患を治療または予防するための方法。

図 1





		NM_000507: <i>Homo sapiens</i> fructose-1,6-bisphosphatase 1 (<i>FBP1</i>)			
		NM_019395: <i>Mus musculus</i> fructose bisphosphatase 1 (<i>Fbp1</i>)			
NM_000507	1	ATGGCTGACGAGGCGCCCTTCGACACGGAGCTCAACCCCTGACCCGCTTCGTATGGAG	60		
NM_019395	1	ATGGCGCAACATGCGCCCTTCGAAACGGAATATGACGACCCCTGACCCGCTTCGTATGGAG	60		

NM_000507	61	GAGGGCAGGAAGGCGCCCGGCGACGGGGAGTTGACCCAGCTGCTCAACTCGCTCTGCACA	120		
NM_019395	61	CAGGGCAGGAAGGCTCAGGGCGACGGGGAGTTGACCCAGCTGCTGAAATCGCTCTGCACC	120		

NM_000507	121	GCAGTCAAGCCATCTCTTCGGCGGTGCGCAAGCGGGCATCGCGCATCTCTATGGCATT	180		
NM_019395	121	GCATCAAGCCATCTCGTCTGCGGTGCGCGAGGGCGGCATCGCACGCTCTATGGTATC	180		

NM_000507	181	GCTGGTCTTACCAACGTGACAGGTGATCAAGTTAAGAAGCTGGAAGCTCTCTCCACGAC	240		
NM_019395	181	GCTGGCTCAACCAATGTGACTGGGGATCAAGTAAGAAGCTGGAATCTCTCCCAATGAC	240		

NM_000507	241	CTGGTTATGAACATGTTAAAGTCATCCTTTGCCACGCTGTGTTCTGCTGTCAGAAAGAGT	300		
NM_019395	241	CTGGTATCAATATGCTGAAGTCGCTTACGCTACCTGTGTTCTGTGTCGAAAGAAAC	300		

NM_000507	301	AAACACGCCATCATATGCGAAACCGGAGAAAGGGTAAATATGTGGTCTGTTTGTATCCC	360		
NM_019395	301	ACAAATGSCATCATATCTGAACCTGAGAAAGGGGCAATATATGTGCTGTGTTCCATCCC	360		

NM_000507	361	CTTGATGGATCTTCCAACATCGATTGCTTGTGTCGGTGGAAACATTTTGGCATCTAT	420		
NM_019395	361	CTTGATGGCTCATCCAACATGACTGCTTGTGTCATCGGAACATTTTGGCATCTAT	420		

NM_000507	421	AGAAAGAAATCAACTGATGAGGCTTCTGAGAAAGATGCTCTGCAACGAGGCGGGAACCTG	480		
NM_019395	421	AGAAAGAAAGTACTGATGAGGCTTCTGAGAAAGATGCTCTGCAACGAGGCGGGAACCTG	480		

NM_000507	481	GTGGCAGCGCGCTACGCACTGTATGGCAGTCCACATGCTGGTCTTCCCATGGATGTT	540		
NM_019395	481	GTGGCAGCGGGATGCGCTCTATGGCAGTCCACATGTTGGTCTTCCCATGGATGTT	540		

NM_000507	541	GGGCTCACTGCTTCATGCTGGACCGCGCATCGGGAGTTCAITTTGGTGGACAAGGAT	600		
NM_019395	541	GGGTCACTGCTTCATGCTGGACCGCGCATCGGGAGTTCAITTTGGTGGACAAGGAT	600		

NM_000507	601	GTGAAGATAAANAAGAAAGTTAAATCTACGCTTAAAGAGGCTCAAGCCAGAGATTT	660		
NM_019395	601	GTGAAGATGAAGAAGAAAGTTAAATCTACGCTTAAATAGGGTTATCCAGAGATTT	660		

NM_000507	661	GACCTGCGCTCAGTGAATACCCAGAGGAAGATTCCCTCCGAGATATTCAGCTCCT	720		
NM_019395	661	GACCTGCGCATCAATGAGTATCTCCAGAGGAAGATTCCCTCCGAGATATTCAGCTCCT	720		

NM_000507	721	TATGGGCCCCGTATGTGGGCTCCATGGTGGTGAATTTATCATCGCACTCTGGTCTACGGA	780		
NM_019395	721	TATGGGCCCCGTATGTGGGCTCCATGGTGGTGAATTTATCATCGCACTCTGGTCTACGGA	780		

NM_000507	781	GGGATATTTCTGTACCCGCTTAACAGAAAGAGGCCCAATGGAAGCTGAGACTCTGTAC	840		
NM_019395	781	GGGATCTTTTATACCCGCTTAACAGAAAGAGGCCCAATGGAAGCTGAGACTCTGTAT	840		

NM_000507	841	GATGCAACCCCATGGCTACGTCATGGAAGGCTGGGGGAATGGCCACCACTGGGAAG	900		
NM_019395	841	GAGTGCAACCCCATGCTTATGTCATGGAAGGCTGGGGGAATGGCCACCACTGGGGAC	900		

NM_000507	901	GAGGCGGTGTAGACGTCATTCCACAGACATTCACAGAGGGCGCGGTGATCTTGGGA	960		
NM_019395	901	AAAGATATATTAGACATCGTTCCCAACGAGATCCACAGAGGGCAACAGTGTCTATGGG	960		

NM_000507	961	TCCCCGACGACGCTGCTCGAGTTCTCGAAGGTGTATGAGAAGCACTCTGCGCAGTGA	1017		
NM_019395	961	TCTCTGAAGATGTGCAGAGGTTCTGGAAGTCTCAGGAAGCTCAGGAAGCAAGAGCCAATGA	1017		

图 4

```

NM_000507: 36 caccctgaccgcgttcgtcatgg
NM_000507: 37 accctgaccgcgttcgtcatgga
NM_000507: 38 ccctgaccgcgttcgtcatggag
NM_000507:433 actgatgagccttctgagaagga
NM_000507:434 ctgatgagccttctgagaaggat
NM_000507:435 tgatgagccttctgagaaggatg
NM_000507:436 gatgagccttctgagaaggatgc
NM_000507:437 atgagccttctgagaaggatgct
NM_000507:438 tgagccttctgagaaggatgctc
NM_000507:439 gagccttctgagaaggatgctct
NM_000507:440 agccttctgagaaggatgctctg
NM_000507:441 gccttctgagaaggatgctctgc
NM_000507:442 ccttctgagaaggatgctctgca
NM_000507:544 gtcaactgcttcatgctggacc
NM_000507:545 tcaactgcttcatgctggaccg

```

图 5

```

NM_000507: 36 caccctgaccgcgttcgtcatgg 1 1 4 4
NM_000507: 37 accctgaccgcgttcgtcatgga 0 1 3 0
NM_000507: 38 ccctgaccgcgttcgtcatggag 0 1 3 0
NM_000507:433 actgatgagccttctgagaagga 0 0 4 0
NM_000507:434 ctgatgagccttctgagaaggat 0 1 3 0
NM_000507:435 tgatgagccttctgagaaggatg 1 0 4 0
NM_000507:436 gatgagccttctgagaaggatgc 1 0 4 0
NM_000507:437 atgagccttctgagaaggatgct 0 1 4 0
NM_000507:438 tgagccttctgagaaggatgctc 0 0 3 0
NM_000507:439 gagccttctgagaaggatgctct 1 1 3 0
NM_000507:440 agccttctgagaaggatgctctg 0 1 3 0
NM_000507:441 gccttctgagaaggatgctctgc 1 1 4 4
NM_000507:442 ccttctgagaaggatgctctgca 0 0 3 0
NM_000507:544 gtcaactgcttcatgctggacc 0 1 2 0
NM_000507:545 tcaactgcttcatgctggaccg 0 0 2 0

```

 6

Sequences producing significant alignments:

	Score (bits)	E Value
ref NM_019395.1		
Mus musculus fructose biphosphatase 1 (Fbp1), ...	46	9e-06
ref NM_000507.2		
Homo sapiens fructose-1,6-bisphosphatase 1 (FBP...	46	9e-06
ref NM_015820.1		
Mus musculus heparan sulfate 6-O-sulfotransfera...	30	0.52
ref NM_003837.1		
Homo sapiens fructose-1,6-bisphosphatase 2 (FBP...	30	0.52
ref NM_145960.1		
Mus musculus hypothetical protein MGC19099 (MGC...	28	2.0
ref NM_010884.1		
Mus musculus N-myc downstream regulated 1 (Ndr1...	28	2.0
ref NM_025405.1		
Mus musculus RIKEN cdNA 111003J19 gene (111003...	26	8.1
ref NM_029098.1		
Mus musculus RIKEN cdNA 1110013E13 gene (111001...	26	8.1
ref NM_012258.2		
Homo sapiens hairy/enhancer-of-split related wi...	26	8.1
ref NM_018113.1		
Homo sapiens lipocalin-interacting membrane rec...	26	8.1
ref NM_014780.1		
Homo sapiens KIAA0076 gene product (KIAA0076), ...	26	8.1
ref NM_012218.1		
Homo sapiens interleukin enhancer binding facto...	26	8.1
ref NM_004516.1		
Homo sapiens interleukin enhancer binding facto...	26	8.1
ref NM_000875.2		
Homo sapiens insulin-like growth factor 1 recep...	26	8.1
ref NM_001188.1		
Homo sapiens BCL2-antagonist/killer 1 (BAK1), mRNA	26	8.1

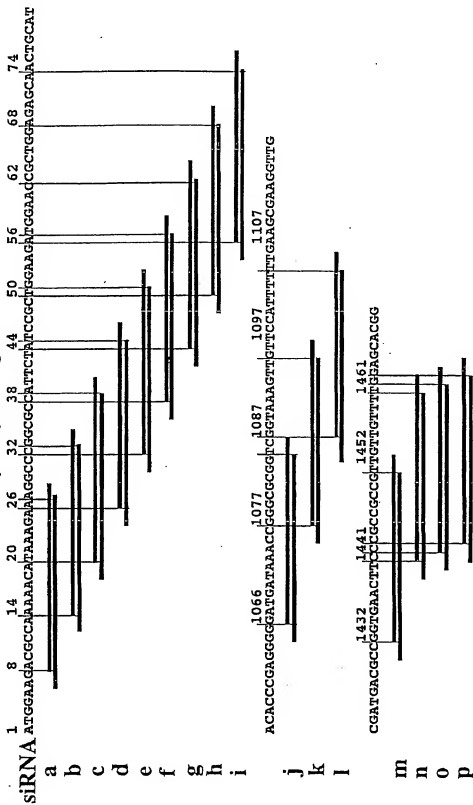
7

Sequences producing significant alignments:

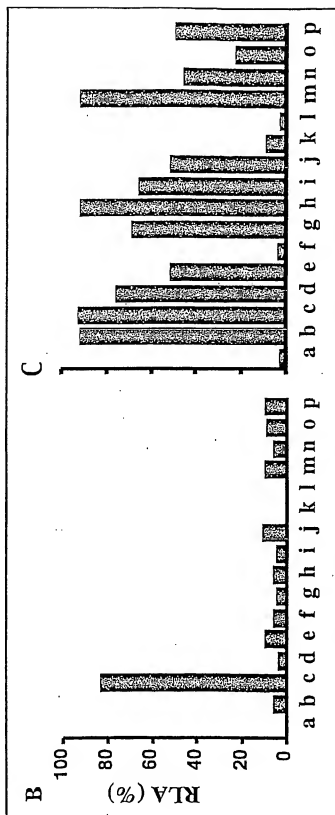
		Score (bits)	E Value
ref NM_019395.1	Mus musculus fructose biphosphatase 1 (Fbp1), ...	46	9e-06
ref NM_000507.2	Homo sapiens fructose-1,6-bisphosphatase 1 (FBP)...	46	9e-06
ref NM_007994.1	Mus musculus fructose biphosphatase 2 (Fbp2), ...	36	0.008
ref NM_139045.1	Homo sapiens SWI/SNF related, matrix associated...	32	0.13
ref NM_003070.2	Homo sapiens SWI/SNF related, matrix associated...	32	0.13
ref NM_022026.1	Mus musculus aquaporin 9 (Aqp9), mRNA	30	0.52
ref NM_011834.1	Mus musculus kynurenine aminotransferase II (Ka...	30	0.52
ref NM_008632.1	Mus musculus microtubule-associated protein 2 (...)	30	0.52
ref NM_023266.1	Mus musculus RIKEN cDNA 1200003I07 gene (120000...	30	0.52
ref NM_144499.1	Homo sapiens guanine nucleotide binding protein...	30	0.52
ref NM_000172.2	Homo sapiens guanine nucleotide binding protein...	30	0.52
ref NM_015125.2	Homo sapiens capicua homolog (Drosophila) (CIC)...	30	0.52
ref NM_145249.1	Mus musculus hypothetical protein MGC18735 (MGC...	28	2.0
ref NM_027017.1	Mus musculus RIKEN cDNA 3300002I08 gene (330000...	28	2.0
ref NM_145490.1	Mus musculus similar to zinc finger protein 97 ...	28	2.0
ref NM_145528.1	Mus musculus similar to Hypothetical protein KI...	28	2.0
ref NM_144546.1	Mus musculus expressed sequence AL024077 (AL024...	28	2.0
ref NM_144852.1	Mus musculus hypothetical protein MGC27672 (MGC...	28	2.0
ref NM_080467.1	Mus musculus Arpase, H+ transporting, lysosomal...	28	2.0
ref NM_029813.1	Mus musculus RIKEN cDNA 2210418O10 gene (221041...	28	2.0
ref NM_029583.1	Mus musculus RIKEN cDNA 2810408B13 gene (281040...	28	2.0
ref NM_001231.2	Homo sapiens caldesmon 1 (fast-twitch, skel...	28	2.0
ref NM_020824.1	Homo sapiens Rho-GTPase activating protein 10 (...)	28	2.0
...			

图 8

NM_000507: 36	caccctgaccgcgttcgtcatgg	1	1	4	4	59
NM_000507: 37	accctgaccgcgttcgtcatgga	0	1	3	0	-
NM_000507: 38	ccctgaccgcgttcgtcatggag	0	1	3	0	-
NM_000507:433	actgatgagccttctgagaagga	0	0	4	0	-
NM_000507:434	ctgatgagccttctgagaaggat	0	1	3	0	-
NM_000507:435	tgatgagccttctgagaaggatg	1	0	4	0	-
NM_000507:436	gatgagccttctgagaaggatgc	1	0	4	0	-
NM_000507:437	atgagccttctgagaaggatgct	0	1	4	0	-
NM_000507:438	tgagccttctgagaaggatgctc	0	0	3	0	-
NM_000507:439	gagccttctgagaaggatgctct	1	1	3	0	-
NM_000507:440	agccttctgagaaggatgctctg	0	1	3	0	-
NM_000507:441	gccttctgagaaggatgctctgc	1	1	4	4	1708
NM_000507:442	ccttctgagaaggatgctctgca	0	0	3	0	-
NM_000507:544	gtcaactgcttcatgctggaccc	0	1	2	0	-
NM_000507:545	tcaactgcttcatgctggacccg	0	0	2	0	-



10



RLA* siRNA	G/C content (%)				Total
	OH	3'-T	M	5'-T	
0.03 a	UC	U-57	20	14-U	32
0.03 l	AG	C-43	20	29-A	32
0.04 f	CG	G-29	80	43-U	47
0.09 k	GG	C-100	80	14-A	63
0.23 o	AG	G-100	60	14-A	58
		66	52	23	46
0.46 n	AA	G-100	60	29-A	63
0.50 p	GG	G-100	40	29-C	58
0.52 e	GG	G-100	20	57-A	63
0.52 j	GG	C-29	60	100-C	68
0.66 i	UC	U-43	80	57-U	58
		74	52	54	62
0.69 g	GA	U-57	60	43-G	53
0.76 d	CU	U-71	100	29-U	63
0.92 m	GG	C-57	60	100-C	74
0.92 h	CG	A-43	40	86-C	58
0.92 b	GU	U-14	20	71-G	37
0.93 c	GU	A-29	80	100-G	63
		45	60	72	58

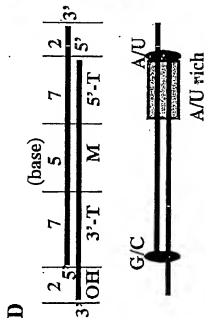


図 1 2

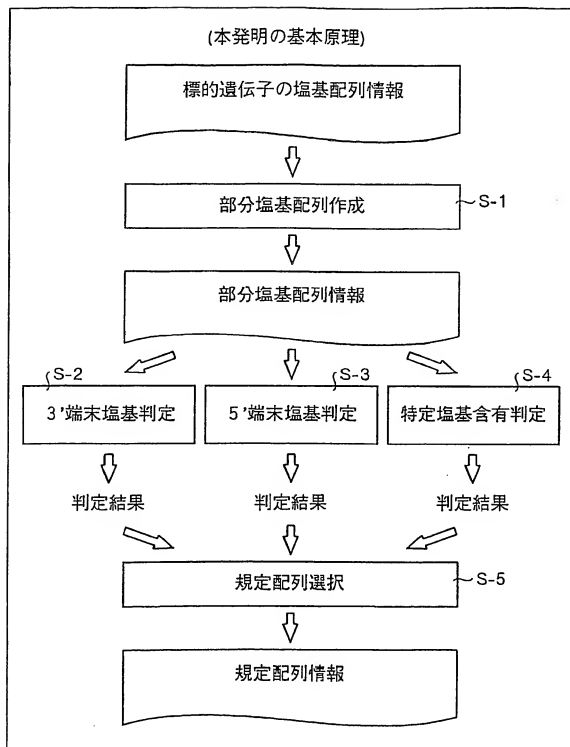


図 13

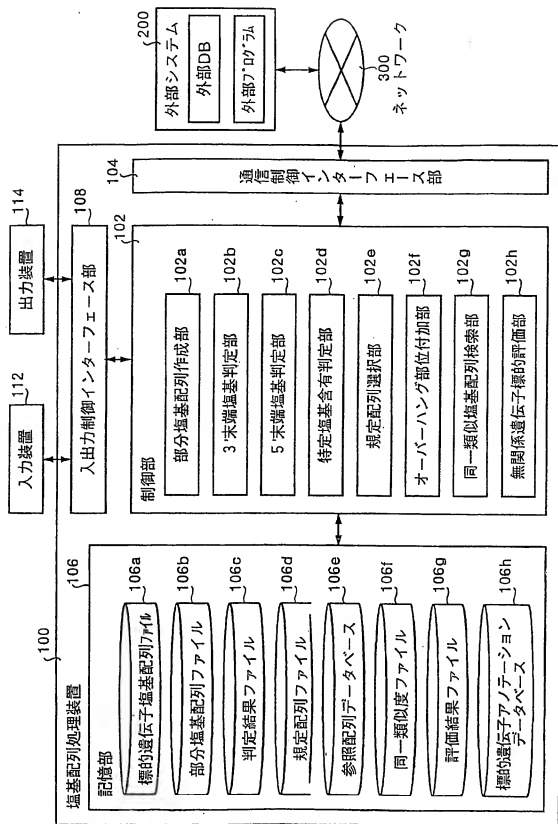


図 1 4

標的遺伝子塩基配列ファイル 106a	
塩基配列識別情報	塩基配列情報
NM_000507	ATGGCTGA ... AGTGA
⋮	⋮

図 1 5

部分塩基配列ファイル 106b		
部分塩基配列 識別情報	部分塩基配列情報	オーバーハング部位 含有情報
NM_000507:36	caccct ... tcatgg	含有
⋮	⋮	⋮

図 16

判定結果ファイル				
部分塩基配列 識別情報	106c			
	3'末端塩基判定 結果	5'末端塩基判定 結果	特定塩基含有判定 結果	総合判定結果
NM_000507:36	1	1	4	4
...

図 17

規定配列ファイル 106d	
部分塩基配列識別情報	規定配列情報
NM_000507:36	caccct ... tcatgg
⋮	⋮

図 18

参照配列データベース 106e	
参照配列識別情報	参照塩基配列情報
ref NM_015820.1	caccct ... gcatgg
⋮	⋮

図 19

同一類似度ファイル 106f		
部分塩基配列 識別情報	規定識別情報	同一類似度
NM_000507:36	ref NM_015820.1	0.52
	ref NM_003837.1	0.52
⋮	⋮	⋮

図 20

評価結果ファイル 106g		
部分塩基配列 識別情報	参照配列識別情報	評価情報
NM_000507:36	5.9	非標的
NM_000507:441	170.8	標的
⋮	⋮	⋮

図 2 1

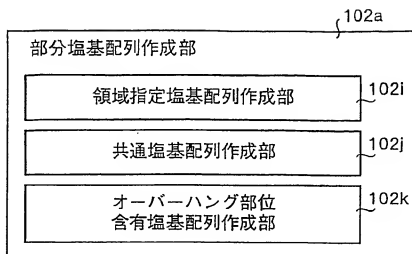


図 2 2

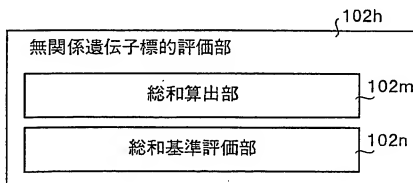


図 23

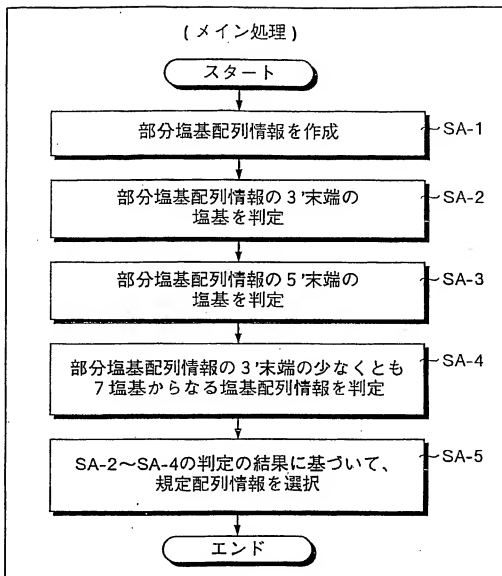


図 24

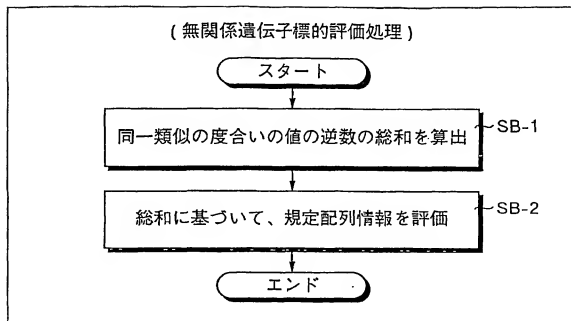


图 25

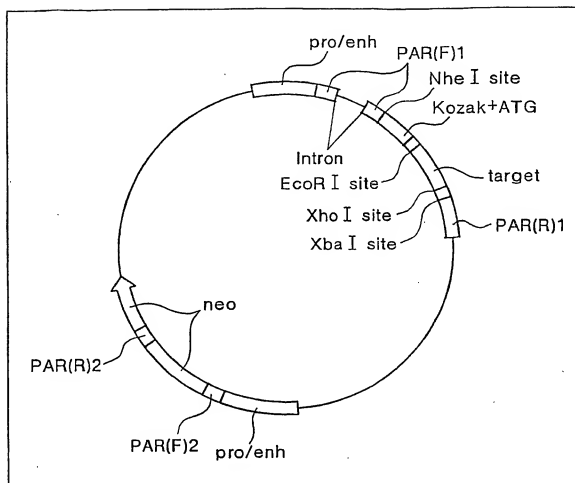


図 2 6

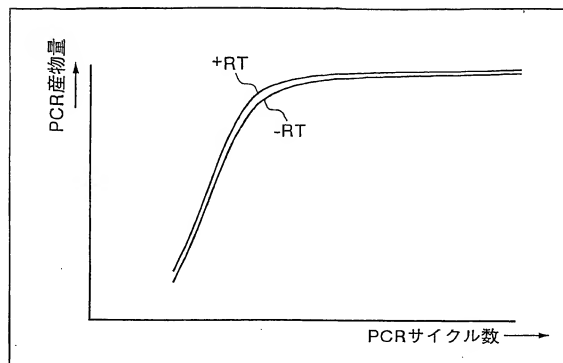


図 2 7

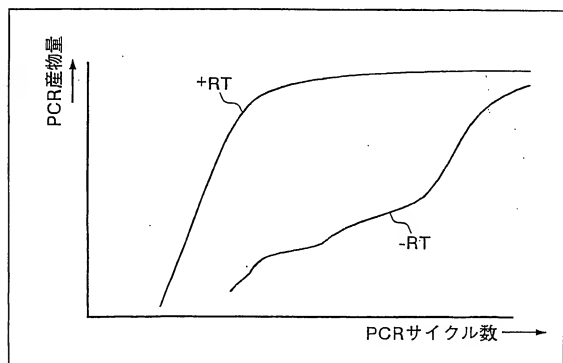


图 28

5' - aggauguu cggcgcccgggc -3'
3' - cguccuacaagccgccgggcc -5'

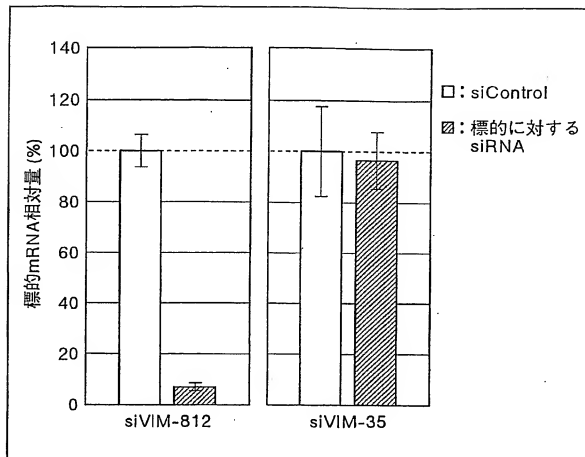
图 29

5' - guacgucagcaauauggaagu -3'
3' - ugc augcagucguuauacuuu -5'

图 30

5' - CAUUCUAUCCGCGGGAAGAUG -3'
3' - CGGUAAGAUAGGCGACCUUCU -5'

図 3 1



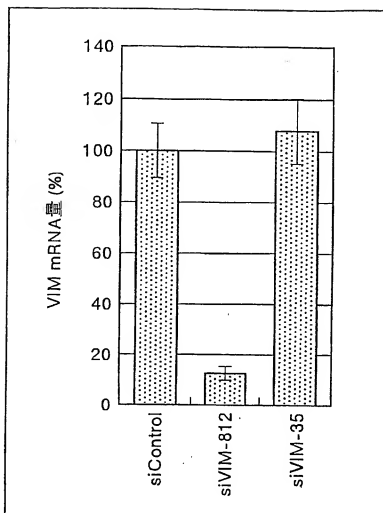


图 3 3

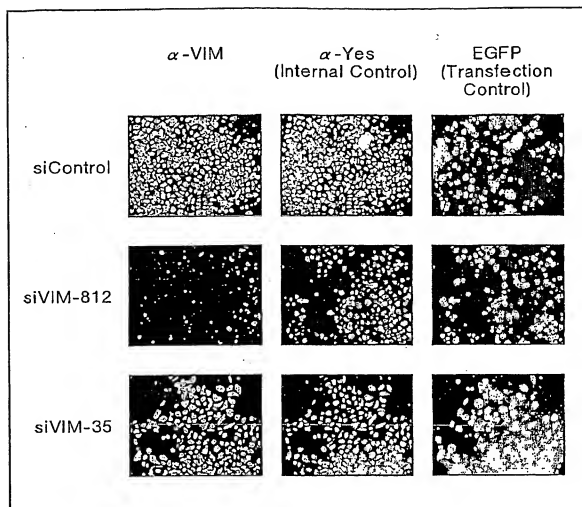
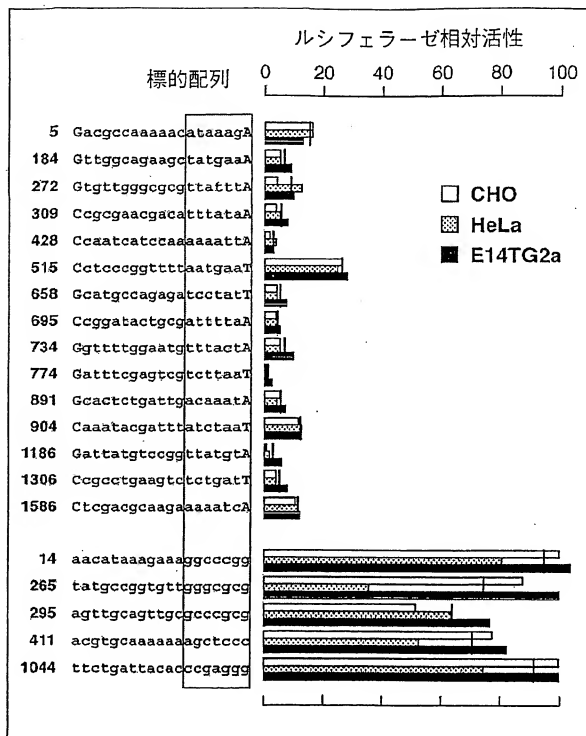


図 3 4



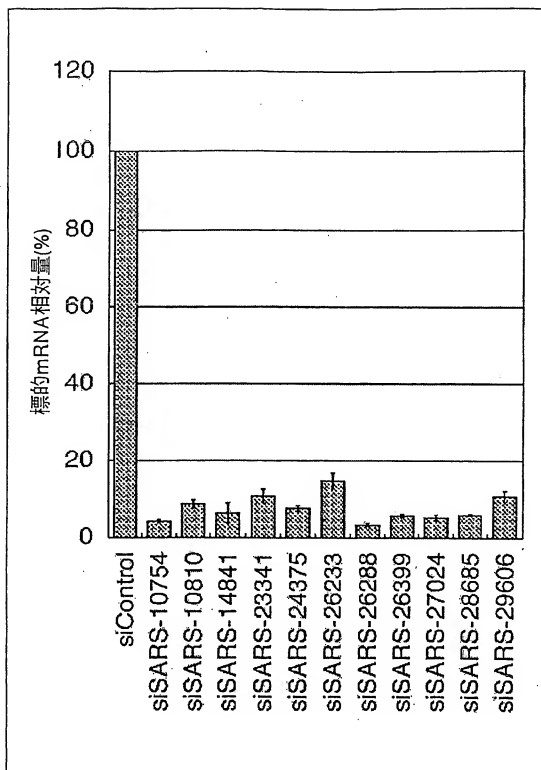


図 3 7

アポトーシスに関与している遺伝子と遺伝子オントロジーにおける
GO__IDとの関係

0006917, 0001915, 0001916, 0001914, 0001913, 0006915, 0043276, 0042981, 0043066, 0006916,
0045476, 0045477, 0045849, 0045850, 0043065, 0001781, 0045767, 0019987, 0045768, 0019050,
0008624, 0008626, 0008628, 0008627, 0008625, 0008629, 0008630, 0042771, 0008631, 0019051,
0006920, 0006918, 0016506, 0008189, 0016329

図 3 8

ホスファターゼをコードしている遺伝子と遺伝子オントロジーにおける
GO-1Dとの関係

0007185, 0045208, 0045209, 0019902, 0019903, 0008157, 0030346, 0042153, 0003998, 0019176,
0016462, 0043135, 0047624, 0047631, 0019144, 0008715, 0047734, 0000810, 0008486, 0047874,
0000298, 0004309, 0008894, 0009678, 0004427, 0050072, 0017110, 0043262, 0004382, 0004787,
0045134, 0017111, 0008094, 0004011, 0008186, 0004010, 0043273, 0050333, 0048253, 0050339,
0047429, 0047693, 0047840, 0004170, 0004551, 0047710, 0008796, 0004081, 0008803, 0047884,
0000210, 0047430, 0004636, 0050355, 0008413, 0008768, 0050380, 0050351, 0008893, 0050108,
0050210, 0016791, 0016302, 0047538, 0050532, 0019143, 0047572, 0003869, 0003993, 0042131,
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0004330, 0042132, 0008877, 0004346, 0004805, 0047846, 0047873, 0047386, 0050530, 0000121,
0047954, 0043136, 0047383, 0004401, 0004437, 0016312, 0004441, 0030487, 0046030, 0017161,
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0008160, 0042030, 0004858, 0019212, 0004864, 0004865, 0001691, 0019208, 0008597, 0017020,
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0005955, 0017023, 0030289, 0000164, 0000159

図 3 9

細胞周期に関係している遺伝子と遺伝子オントロジーにおける
GO_! Dとの関係

0030996, 0007050, 0000074, 0007049, 0007113, 0051330, 0000080, 0000114, 0007089, 0000081,
0051331, 0000085, 0000116, 0051328, 0051332, 0051329, 0000082, 0000083, 0000079, 0045786,
0045787, 0000086, 0000117, 0000216, 0000084, 0000115, 0051327, 0000087, 0000075, 0051321,
0000278, 0045448, 0035185, 0007347, 0046001, 0045976, 0046002, 0045977, 0009794, 0007346,
0045930, 0046003, 0007348, 0045931, 0046004, 0035186, 0045749, 0007090, 0045750, 0000751,
0030571, 0000077, 0006977, 0000320, 0000321, 0019055, 0046792, 0046615, 0003750

図 4 O

レセプターをコードしている遺伝子と遺伝子オントロジーにおける GO_ID との関係

0007176, 0007175, 0007177, 0045741, 0045877, 0045878, 0043109, 0007226, 0015464, 0030594, 0004888, 0016907, 0008227, 0004981, 0001873, 0008329, 0001874, 0004978, 0004977, 0008188, 0042654, 0004930, 0004980, 0004952, 0001588, 0001590, 0001589, 0001591, 0001670, 0001592, 0001593, 0001607, 0008528, 0004979, 0004946, 0004951, 0015054, 0035237, 0004966, 0042263, 0004983, 0001602, 0001601, 0016492, 0035236, 0004994, 0004995, 0016498, 0016497, 0016496, 0004872, 0008503, 0001646, 0001644, 0016502, 0001877, 0001875, 0016019, 0001653, 0016941, 0001584, 0001605, 0008261, 0004942, 0004943, 0004944, 0001595, 0001596, 0004945, 0004947, 0001598, 0004962, 0001599, 0001600, 0001637, 0004950, 0016493, 0016494, 0004918, 0004907, 0016495, 0001606, 0035013, 0004982, 0004985, 0004986, 0004987, 0004988, 0015051, 0016499, 0001648, 0015057, 0001604, 0001603, 0004990, 0005000, 0045015, 0005046, 0005051, 0005052, 0005053, 0050839, 0001857, 0004875, 0001847, 0004877, 0001861, 0004878, 0001858, 0004876, 0001860, 0001859, 0004904, 0004896, 0004905, 0004906, 0004908, 0004909, 0004910, 0004920, 0004921, 0016517, 0016515, 0016518, 0042010, 0042012, 0030368, 0042008, 0042014, 0004911, 0042016, 0001532, 0042018, 0042020, 0045506, 0045507, 0045508, 0045509, 0004912, 0004913, 0004914, 0004915, 0004917, 0004919, 0005031, 0005032, 0005033, 0005035, 0005030, 0019766, 0019763, 0019767, 0019768, 0019769, 0019770, 0019771, 0019772, 0001793, 0001792, 0008262, 0005041, 0008032, 0030228, 0001863, 0008029, 0008030, 0001565, 0005024, 0017002, 0016361, 0005025, 0016362, 0005026, 0009885, 0009884, 0008288, 0005003, 0005004, 0005005, 0005006, 0005023, 0008313, 0005007, 0005008, 0005009, 0005010, 0005011, 0005017, 0005018, 0005019, 0005020, 0005021, 0042096, 0004892, 0005029, 0005028, 0008529, 0005045, 0008530, 0004928, 0004929, 0042099, 0019764, 0015029, 0019765, 0008019, 0005012, 0005013, 0005014, 0005015, 0005016, 0005027, 0004927, 0004894, 0050785, 0016964, 0030226, 0030227, 0004874, 0015026, 0008036, 0030373, 0008095, 0042071, 0004879, 0004880, 0003708, 0004886, 0003707, 0004882, 0004884, 0030284, 0004883, 0017082, 0004887, 0008434, 0001566, 0009881, 0009882, 0008020, 0004975, 0009883, 0004873, 0008046, 0005042, 0005043, 0001647, 0005040, 0045125, 0001619, 0016526, 0001620, 0001625, 0001629, 0001628, 0001630, 0001623, 0001624, 0001622, 0001638, 0001633, 0001645, 0001643, 0008067, 0008066, 0001640, 0001641, 0001642, 0004965, 0016917, 0001639, 0016503, 0004932, 0004933, 0004934, 0004936, 0004937, 0004938, 0004939, 0004940, 0004941, 0015052, 0004969, 0004989, 0004993, 0001585, 0001586, 0001587, 0016609, 0001594, 0008226, 0004949, 0004953, 0004954, 0004955, 0016501, 0004959, 0004956, 0004957, 0004958, 0001785, 0004960, 0004961, 0001627, 0004974, 0001631, 0001632, 0008502, 0001626, 0001608, 0045028, 0001614, 0001609, 0008501, 0001610, 0001611, 0001612, 0001613, 0045032, 0045031, 0015065, 0045029, 0045030, 0004984, 0004992, 0001621, 0016500, 0004963, 0004968, 0004964, 0004976, 0030273, 0004996, 0008527, 0001616, 0001617, 0004997, 0001635, 0004948, 0001636, 0015056, 0016519, 0015058, 0016523, 0004967, 0016520, 0004991, 0001634, 0016522, 0015055, 0004999, 0004890, 0004970, 0004971, 0015277, 0004972, 0004897, 0004900, 0004901, 0030525, 0016167, 0004902, 0030524, 0004903, 0004923, 0004924, 0004925, 0030369, 0005055, 0016524, 0030229, 0030106, 0030108, 0030107, 0030109, 0030110, 0045012, 0045233, 0030379, 0004926, 0008158, 0042813, 0001571, 0005049, 0030376, 0005044, 0017154, 0008281, 0005056, 0004998, 0030377, 0016931, 0019041, 0001618, 0008196, 0005484

図 4 1

イオンチャンネルをコードしている遺伝子と遺伝子オントロジー
における GO_ I D との関係

0045161, 0045163, 0045162, 0005254, 0005216, 0005253, 0005224, 0005217, 0008068, 0005234,
0016934, 0016933, 0004891, 0005237, 0019182, 0005229, 0005247, 0005244, 0015274, 0015257,
0015482, 0008308, 0005225, 0005261, 0015251, 0004931, 0005231, 0005227, 0015276, 0005262,
0015278, 0005220, 0005218, 0005219, 0015279, 0015275, 0008381, 0005245, 0010173, 0015270,
0008331, 0008086, 0008332, 0015252, 0005221, 0005222, 0005223, 0004889, 0016904, 0015281,
0015249, 0005267, 0015269, 0016286, 0005228, 0005249, 0005251, 0005242, 0015272, 0015467,
0015273, 0005252, 0015271, 0005250, 0005232, 0005272, 0015280, 0005248, 0005230, 0030171,
0015282, 0008282, 0019183, 0005891, 0008087, 0008076, 0001518, 0017071, 0016935

図 4 2

シグナル伝達系に関与している遺伝子と遺伝子オントロジーにおける
GO_1 Dとの関係

0007165, 0007166, 0009966, 0009968, 0009967, 0000750, 0007330, 0030454, 0000757, 0007234,
0007227, 0000160, 0007263, 0007264, 0016601, 0035020, 0051056, 0035021, 0051058, 0035022,
0051057, 0031291, 0007265, 0046578, 0046580, 0046579, 0035024, 0035023, 0035025, 0007266,
0001402, 0000077, 0042770, 0006977, 0030330, 0006976, 0008630, 0042771, 0006978, 0042772,
0008269, 0050851, 0050853, 0050859, 0050861, 0050854, 0050858, 0050860, 0050857, 0050862,
0050856, 0050852, 0019221, 0007167, 0007168, 0007178, 0030509, 0030510, 0030514, 0030513,
0007179, 0008101, 0007169, 0048013, 0007173, 0008314, 0042058, 0042059, 0045742, 0008543,
0040036, 0040037, 0045743, 0048012, 0008286, 0046626, 0046627, 0046628, 0048009, 0048011,
0048008, 0045501, 0045873, 0045874, 0048014, 0008293, 0048010, 0030947, 0030948, 0030949,
0007185, 0007186, 0007212, 0042699, 0007214, 0007216, 0007218, 0007211, 0008277, 0045744,
0045745, 0007210, 0007217, 0007215, 0035235, 0007229, 0007219, 0030179, 0008593, 0045746,
0045747, 0007231, 0007232, 0008589, 0045879, 0045880, 0008063, 0008592, 0045751, 0045752,
0016055, 0007222, 0008590, 0045810, 0045811, 0008591, 0045812, 0045813, 0030111, 0030178,
0030177, 0009785, 0010019, 0009870, 0010204, 0006984, 0009873, 0010104, 0010105, 0030522,
0048384, 0048385, 0048387, 0048386, 0030518, 0030521, 0035076, 0030520, 0042921, 0050847,
0009867, 0009864, 0010017, 0010018, 0010161, 0009863, 0009862, 0031098, 0042700

図 4 3 - 1

キナーゼおよびキナーゼ活性に関与している遺伝子と
遺伝子オントロジーにおける GO_ID との関係

0007178, 0007169, 0007171, 0007205, 0001789, 0042313, 0007233, 0045860, 0009747, 0009748,
0006987, 0007243, 0007249, 0007250, 0043122, 0043124, 0043123, 0000187, 0007257, 0000186,
0007255, 0007256, 0000185, 0042655, 0007254, 0031098, 0000079, 0045859, 0045736, 0006469,
0045737, 0009764, 0045204, 0006130, 0007251, 0007170, 0006224, 0043127, 0043126, 0043128,
0019900, 0019901, 0008432, 0051019, 0048273, 0042808, 0051018, 0005080, 0030971, 0005115,
0008579, 0017017, 0050408, 0004611, 0004612, 0030585, 0004613, 0003848, 0016301, 0008728,
0019205, 0050148, 0004749, 0019200, 0004788, 0047506, 0047507, 0050515, 0008698, 0047590,
0047336, 0047601, 0008776, 0003991, 0047620, 0004020, 0047628, 0047633, 0047649, 0047650,
0019202, 0004054, 0018110, 0035173, 0004072, 0004349, 0004413, 0047666, 0047667, 0047700,
0047758, 0047761, 0047764, 0008804, 0008671, 0008673, 0008787, 0019150, 0008865, 0004335,
0004340, 0004396, 0004454, 0009702, 0008737, 0045127, 0009384, 0008443, 0008662, 0003873,
0003872, 0008893, 0004747, 0008741, 0004856, 0008744, 0004103, 0008819, 0004111, 0047814,
0017050, 0047841, 0004140, 0047848, 0004143, 0047333, 0008842, 0004168, 0047878, 0004305,
0047887, 0047900, 0030387, 0050201, 0047912, 0046316, 0047931, 0047940, 0047944, 0008887,
0004370, 0004371, 0047973, 0047976, 0009927, 0004417, 0047992, 0008902, 0008904, 0047715,
0008906, 0004428, 0004430, 0001727, 0019140, 0035299, 0035300, 0050517, 0050516, 0047325,
0047326, 0008440, 0016307, 0000285, 0016308, 0045215, 0016309, 0035005, 0035004, 0016303,
0046934, 0008910, 0001729, 0008481, 0001728, 0050059, 0050073, 0019158, 0004496, 0003951,
0042736, 0019206, 0004001, 0019136, 0004136, 0004137, 0004138, 0004797, 0000816, 0004849,
0004550, 0046899, 0019201, 0004017, 0004127, 0004385, 0004798, 0009041, 0050145, 0050154,
0050165, 0004594, 0018720, 0050190, 0050191, 0004618, 0008972, 0004631, 0050195, 0008974,
0046404, 0008976, 0008980, 0050222, 0004672, 0047696, 0019912, 0019913, 0030295, 0035174,
0004674, 0035175, 0035184, 0050063, 0004676, 0004679, 0009931, 0004683, 0004685, 0004684,
0004686, 0004688, 0016905, 0004687, 0004689, 0008606, 0004680, 0004681, 0004682, 0008604,
0004690, 0004691, 0008602, 0004692, 0004693, 0016537, 0004677, 0004694, 0004703, 0004678,
0004695, 0004696, 0008384, 0004697, 0004700, 0004698, 0004699, 0004701, 0004702, 0004707,
0008338, 0016908, 0016909, 0004705, 0008339, 0004709, 0004706, 0004710, 0008349, 0042656,
0004704, 0042801, 0004675, 0019199, 0004711, 0008353, 0004712, 0004708, 0008545, 0004673,
0008896, 0008256, 0008257, 0009784, 0009885, 0004713, 0004715, 0004716, 0004718, 0004714,
0050254, 0050321, 0050359, 0050225, 0008478, 0004743, 0008986, 0008531, 0050262, 0046522,
0050276, 0050277, 0004756, 0004765, 0050299, 0050300, 0050316, 0050317, 0009024, 0050324,
0009029, 0019165, 0050331, 0009030, 0050354, 0009038, 0050394, 0050400, 0047323, 0050405,
0047322, 0008772, 0004740, 0050369, 0050521, 0050242, 0016536, 0019209, 0019207, 0019887,
0016534, 0016535, 0042557, 0042556, 0030296, 0030298, 0030297, 0019210, 0004860, 0008427,
0004862, 0004861, 0008426, 0004863, 0030291, 0030292, 0030294, 0030293, 0035014, 0046935,

図 4 3 - 2

キナーゼおよびキナーゼ活性に関与している遺伝子
と遺伝子オントロジーにおけるGO_IDとの関係

0008603, 0019914, 0016538, 0003751, 0003752, 0003753, 0008607, 0008605, 0004429, 0004431,
0004432, 0004433, 0008438, 0004717, 0005077, 0004384, 0017135, 0016304, 0016305, 0016306,
0015072, 0015073, 0005079, 0016910, 0016911, 0016912, 0017027, 0001566, 0001571, 0030377,
0005078, 0005076, 0008268, 0005071, 0005066, 0005068, 0005069, 0000307, 0000308, 0019908,
0005945, 0008385, 0005942, 0035030, 0035031, 0035032, 0016533, 0019907, 0005956, 0005943,
0005944, 0005954, 0005952, 0005958, 0005959, 0005964, 0009358, 0009365

図 4 4

転写制御に関与している遺伝子と遺伝子オントロロジーにおける
GO_IDとの関係

0045990, 0006355, 0045013, 0045892, 0045014, 0046015, 0045991, 0045893, 0046016, 0007221,
0051091, 0007228, 0006994, 0035104, 0051092, 0030969, 0006990, 0043193, 0045944, 0042994,
0000114, 0006357, 0000116, 0000083, 0000117, 0000115, 0051037, 0051038, 0051039, 0007072,
0007073, 0007074, 0007075, 0045896, 0007068, 0007069, 0016479, 0046017, 0007070, 0000122,
0046021, 0007071, 0016480, 0046023, 0045897, 0046018, 0045943, 0046022, 0046024, 0045945,
0006356, 0006359, 0006342, 0016440, 0048096, 0000716, 0006283, 0016441, 0035194, 0016481,
0045449, 0045996, 0009373, 0046020, 0046019, 0045816, 0006358, 0017055, 0045898, 0045894,
0007532, 0045941, 0007357, 0007360, 0007363, 0009371, 0007329, 0045817, 0045899, 0045895,
0050434, 0046782, 0051090, 0051123, 0009300, 0006351, 0016552, 0016551, 0006350, 0009299,
0042789, 0006366, 0019083, 0019084, 0019085, 0019086, 0006362, 0006368, 0006385, 0009303,
0042791, 0006383, 0042792, 0006390, 0042794, 0042793, 0042790, 0006360, 0009302, 0009301,
0042795, 0042796, 0006393, 0006353, 0006391, 0006352, 0006361, 0006363, 0019223, 0006367,
0006369, 0019224, 0030846, 0030847, 0006384, 0006386, 0019225, 0042797, 0009304, 0006410,
0016245, 0042992, 0042990, 0042993, 0042991, 0006340, 0045891, 0045889, 0006339, 0045888,
0045890, 0006988, 0006989, 0019056, 0006978, 0042772, 0003700, 0000130, 0030528, 0003705,
0003702, 0008134, 0003712, 0003713, 0030374, 0003714, 0003719, 0017163, 0003701, 0016251,
0003703, 0016455, 0016252, 0003704, 0003706, 0003709, 0030401, 0016986, 0016988, 0003715,
0003716, 0003717, 0003718, 0016563, 0003710, 0042156, 0003711, 0008148, 0008159, 0016943,
0016944, 0016945, 0016564, 0016565, 0016566, 0000120, 0005667, 0005672, 0005669, 0005673,
0005674, 0005675, 0035101, 0008023, 0008024, 0005671, 0030907, 0000126, 0000127, 0017053,
0000346, 0019036, 0005670

図 4 5

GPCRおよびGPCRに関与している遺伝子と遺伝子オントロジー
におけるGO_IDとの関係

0007186, 0007189, 0007193, 0007187, 0007188, 0007190, 0007199, 0007200, 0030265, 0001789,
0008277, 0045744, 0045745, 0035104, 0006992, 0035103, 0006993, 0035105, 0007201, 0045761,
0016907, 0004930, 0008528, 0016492, 0001646, 0001644, 0001637, 0001664, 0004703, 0004678,
0005065, 0003927, 0000263, 0000264, 0000265, 0008020, 0004975, 0001647, 0016526, 0001629,
0008067, 0004933, 0001584, 0016609, 0001627, 0001608, 0045028, 0001609, 0008501, 0001610,
0001611, 0001612, 0001613, 0001633, 0030379, 0004926, 0016299, 0015467, 0015273, 0005834

図46

登録番号	遺伝子名	refseq NO.	標的位置	標的位置	配列番号(1-7)	登録番号(1-7)	生物学的機能カテゴリー	文献に基づく生物学的機能	関連疾患名
1	A2M	NM_000014.3	4239	tcgtcaagctgcatacagcaga	127274	603769	—	receptor	Alzheimer disease(アルツハイマー病)
2	ADSL	NM_000026.1	165	tcgtctcatcagcaggaacaaat	234456	618797	—	adenylosuccinate lyase	autism(自閉症)
3	ADSL	NM_000026.1	422	tcgtcttcgcactttgctaagg	234462	618803	see also 2 line	—	—
4	ALAS2	NM_000032.1	1168	tcgtggagcgttcagtaataatgc	216068	603406	—	general RNA polymerase II transcription factor	sideroblastic anemia(鉄芽球性貧血)
5	ABCD1	NM_000033.2	1644	caagcagatctgcagttattga	70788	492568	—	proxisomal membrane transporter	adrenoleukodystrophy(副腎臓白質ジストロフィー)
6	ANK1	NM_000037.2	4951	gcgcacacattgattcagatgc	286543	662268	signal transduction	—	spherocytosis(遺伝性球形赤血球症)
7	APC	NM_000038.2	44	tcgcactctatgacacagctgt	127993	530214	signal transduction	—	thyroid cancer(甲状腺癌), colorectal cancer(大腸癌), hepatoblastoma(肝芽腫), adenomatous polyposis of the colon(腸腫瘍性ポリプ), cerebral astrocytoma(大脳星状細胞腫), colorectal adenocarcinoma(大腸腺癌), adrenocortical cancer(腎皮質癌), hepatocellular carcinoma(肝細胞癌), squamous cell cancer(扁平上皮癌), familial adenomatous polyposis(家族性腺腫性ポリプ), familial adenomatous polyposis(家族性大腸腺腫性ポリプ), familial adenomatous polyposis(家族性大腸腺腫性ポリプ), familial adenomatous polyposis(家族性大腸腺腫性ポリプ)
8	APC	NM_000038.2	128	tcgcactctatgacacagctgt	127997	530216	see also 7 line	—	—
9	APC	NM_000038.2	993	tcgcactctatgacacagctgt	128014	530240	see also 7 line	—	—
10	APC	NM_000038.2	1187	caatgcagcactccacacacata	128018	530245	see also 7 line	—	—
11	APC	NM_000038.2	1898	tacttcgcagcagcagcagcagc	128044	530257	see also 7 line	—	—
12	APC	NM_000038.2	1960	atgttcagcttcgttcagctca	128048	530261	see also 7 line	—	—
13	APC	NM_000038.2	2847	tcctcaatgcagcagcagcagc	128069	530283	see also 7 line	—	—
14	APC	NM_000038.2	4969	tcgaagcagcagcagcagcagc	128148	530338	see also 7 line	—	—
15	APC	NM_000038.2	7025	tcctcttcgttcagcagcagc	128197	530399	see also 7 line	—	—
16	AR	NM_000044.2	3598	tcctgaacttcgagcagcagc	907	441709	receptor activity, transcription, regulat	—	androgen insensitivity syndrome(アンドロゲン抵抗性症候群), breast cancer(乳癌), androgen insensitivity(アンドロゲン不感症候群), prostate cancer(前立腺癌), spinal and bulbar muscular atrophy(脊髄延髄性筋萎縮症)
17	ASPA	NM_000049.1	890	tcctaatcagcagcagcagcagc	203366	712615	signal transduction	aspartacylase	Canavan disease(カナヴァン病)
18	ATM	NM_000051.2	1860	accttccttcgacagcagcagc	21913	455385	transcription, regulat	—	breast cancer(乳癌), non-Hodgkin lymphoma(非ホジキンリンパ腫), ataxia telangiectasia(毛細血管拡張性頭暈失調症, leukemia(白血病), lymphoma(リンパ腫))
19	ATM	NM_000051.2	7802	atgagcttccttcagcagcagc	22090	455378	signal transduction	—	—
20	ATM	NM_000051.2	9184	tccttccttcgagcagcagcagc	22121	455332	see also 18 line	—	—

図46 (続き)

21	ATP7A	NM_000052.1	2179	tgcactcttccacataacaa	73448	495029	-	plasma membrane cation-transporting ATPase	Menkes syndrome(メンケス病)
22	ATP7A	NM_000052.1	2654	gtgactgtgaactctgacaaag	73463	495049	see also 21 line		
23	ATP7A	NM_000052.1	2667	tgtcacactgtgagatcatatt	73464	495050	see also 21 line		
24	ATP7A	NM_000052.1	3105	tgtcttccaaactctatccaa	73481	495062	see also 21 line		
25	ATP7A	NM_000052.1	3940	tctcaggttgcacttctaaag	73500	495086	see also 21 line		
26	ATP7B	NM_000053.1	202	gcacgtcgagaactcttctaa	73523	495119	-	plasma membrane cation-transporting ATPase	Wilson disease(ウィルソン病)
27	ATP7B	NM_000053.1	204	cactgagaactcttctctatcag	73524	495120	see also 26 line		
28	ATP7B	NM_000053.1	1923	ggagcaactgcatcactatag	73555	495147	see also 26 line		
29	BOHE	NM_000055.1	1925	aacgattacactctagcagaaga	199835	591637	-	serine esterase	hypocholinesterasemia(ヒポコリンエステラーゼ欠損症), butyrylcholinesterase deficiency(ブチリルコリンエステラーゼ欠損症), pseudocholinesterase deficiency(偽コリンエステラーゼ欠損症), Alzheimer disease(アルツハイマー病)
30	BLM	NM_000057.1	2067	ctgcataattttgaactaatca	22788	456445	-	ATP dependent DNA helicase	Bloom syndrome(ブルーム症候群)
31	BLM	NM_000057.1	2430	aggaactctctgcacactttgt	22797	456458	see also 30 line		
32	BLM	NM_000057.1	2943	gaactctctgattgattcctgc	22820	456477	see also 30 line		
33	BLM	NM_000057.1	3773	tgtgttcacttctcactatatt	22848	456502	see also 30 line		
34	BRCA2	NM_000059.1	8051	caagtctgatacaaaccttatt	19386	452248	transcription regulat or, cell cycle	USF43/USF44 complex	breast cancer(乳癌), Fanconi anemia(ファンconi 貧血), Li-Fraumeni syndrome(リー・フラウメニ症候群), ovarian cancer(卵巣性卵巣癌), pancreatic cancer(膵臓癌), ocular melanoma(眼黒腫)
35	BTD	NM_000060.1	1574	ctggagaatgacacattcttc	204000	594332	-	hydrolase, acting on carbon-nitrogen bonds	Bruton's agammaglobulinemia(無γグロブリン血症), Bruton agammaglobulinemia(無γグロブリン血症)
36	BTX	NM_000061.1	322	gggttctaagtgattgaaga	74570	496474	kinase, related, apoptosis	protein tyrosine kinase	episodic ataxia(陣間性運動失調), familial periodic cerebellar ataxia(家族性周期性小脳性運動失調), hemiplegic migraine(片麻痺性片頭痛), paroxysmal cerebellar ataxia(発作性小脳性運動失調), spinocerebellar ataxia(脊髄小脳失調)
37	BTX	NM_000061.1	645	atctctatggctgcacaaatttg	74375	496486	see also 36 line		
38	BTX	NM_000061.1	648	tgtctatggctgcacaaatttg	74376	496487	see also 36 line		
39	BTX	NM_000061.1	1731	caagctgaactgtttgtgaac	74396	496517	see also 36 line		
40	CACNA1A	NM_000068.2	898	gtgtctgataccacagtattca	23493	456941	channel, transcription regulat or		
41	CACNA1A	NM_000068.2	903	tggatacccaagatttatacgtg	23494	456942	see also 40 line		
42	CACNA1A	NM_000068.2	1867	ctctttatgttcgaatttttat	23518	456962	see also 40 line		
43	CACNA1A	NM_000068.2	5867	ctcttcctcttagcaagaattgt	23572	456987	see also 40 line		
44	CACNA1A	NM_000068.2	5869	ctctgctcttagcaagaattgtc	23573	456988	see also 40 line		

図46 (続き)

3

45	CRS	NM_000071.1	439	ccccctatgctgacataca	233577	618008	—	cyathophore beta- synthase	atherosclerosis(粥状硬化症), homocystinuria(ホ モシスチン尿症)
46	CRS	NM_000071.1	441	ccccctatgctgacataca	233578	618009	see also 45 line		
47	CRS	NM_000071.1	442	ccccctatgctgacataca	233579	618010	see also 45 line		
48	CD36	NM_000072.1	327	ttagatcttttgatgcacaaac	247777	634387	receptor activity channel, receptor activity, activated cation- selective channel	receptor nicotinic acetylcholine- activated cation- selective channel	atherosclerosis(粥状硬化症), platelet glycoprotein IV deficiency(血小板糖タンパク質 欠乏症)
49	CHRN	NM_000080.2	953	gcacagctctcttcgaatt	179197	572412			
50	CHRN	NM_000080.2	954	gcacagctctcttcgaatt	179198	572413	see also 49 line		Chediak-Higashi syndrome(チエディアック-東症)
51	CHS1	NM_000081.1	6245	ttcacctctctctaaatcttc	268177	651748	signal transduction	protein transporter	
52	CHS1	NM_000081.1	7098	atctctgagatctgaacttc	268207	651774	see also 51 line		
53	CHS1	NM_000081.1	7327	gcacacagctctctcttcga	268213	651783	see also 51 line		
54	CHS1	NM_000081.1	9250	atctctgagatctgaacttc	268228	651830	see also 51 line		Becker's disease(ベッカー病), Thomsen's disease(トムゼン病)
55	CLCN1	NM_000083.1	1305	ccccacagagtggtgcaatcc	263225	646852	channel	voltage-gated chloride channel	Fanconi syndrome(ファンコニ症候群), nephrolithiasis(腎結石症)
56	CLCN5	NM_000084.1	320	gtatgagacatctgattcttc	263357	646992	channel	voltage-gated chloride channel	
57	CLCN5	NM_000084.1	324	aggaacatctatgattcaata	263359	646993	see also 56 line		
58	CLCN5	NM_000084.1	386	gtcacagagatgacacataaa	263363	646995	see also 56 line		
59	CLCN5	NM_000084.1	417	gtcacagagatgacacataaa	263365	646999	see also 56 line		
60	CLCN5	NM_000084.1	966	gtcacagagatgacacataaa	263378	647013	see also 56 line		
61	CLCN5	NM_000084.1	1831	gtcacagagatgacacataaa	263398	647036	see also 56 line		
62	CLCN5	NM_000084.1	1833	gtcacagagatgacacataaa	263399	647037	see also 56 line		
63	CLCN5	NM_000084.1	1981	gtcacagagatgacacataaa	263404	647040	see also 56 line		
64	CLCN5	NM_000084.1	2081	gtcacagagatgacacataaa	263406	647041	see also 56 line		
65	CLCN5	NM_000084.1	2460	gtcacagagatgacacataaa	263410	647051	see also 56 line		
66	CLCN5	NM_000084.1	2460	gtcacagagatgacacataaa	263410	647051	see also 56 line		
67	COL1A2	NM_000089.2	3521	caagccacagagctatgagctg	288067	659376	—	translation regulator	retinitis pigmentosa(色素性網膜病), lipoblastoma(脂肪芽細胞腫), Ehlers-Danlos syndrome(エーラー-ダンロス症候群), osteogenesis imperfecta(骨形成不全症)
68	COL1A1	NM_000093.2	913	caagccacagagctatgagctg	177479	659682	—	heparin binding	Ehlers-Danlos syndrome(エーラー-ダンロス症候 群), breast cancer(乳癌), gynecomastia(女性化乳 房), head and neck squamous cell carcinoma(頭 頸部扁平上皮細胞癌)
69	CYP19A1	NM_000103.2	811	tggcaagctctctctcaacac	221666	608596	—	—	cardiomyopathy(アールニール性心筋症), muscular dystrophy(筋ジストロフィ)
70	DMD	NM_000109.2	1192	ccccacagctgctgacagagc	116679	321655	—	—	
71	DMD	NM_000109.2	1590	atgacatctctcaatcaagagc	116688	321669	see also 70 line		
72	DMD	NM_000109.2	4112	tggacagctgctgacagagc	116748	321728	see also 70 line		
73	DMD	NM_000109.2	4114	ggagcagctgctgacagagc	116749	321730	see also 70 line		
74	DMD	NM_000109.2	4364	tctctgctgctgacagagc	116757	321739	see also 70 line		
75	DMD	NM_000109.2	5154	ggagcagctgctgacagagc	116760	321773	see also 70 line		

図46 (続き)

[illegible]

図4.6 (続き)

5

105	EXT1	NM_000127.1	1792	caggcttggtctccagattcc	213308	601665	see also 100 line			
106	EXT1	NM_000127.1	1951	cagctctatctccagatbaaa	213315	601674	see also 100 line			
107	EXT1	NM_000127.1	2000	ttctgttgagactctattttc	213319	601676	see also 100 line			
108	EXT1	NM_000127.1	2033	aggttttgatctacacacaga	213322	601677	see also 100 line			
109	EXT1	NM_000127.1	2078	aagctcatctacacacagttt	213324	601679	see also 100 line			
110	EXT1	NM_000127.1	2079	apccatctacacacacagttt	213325	601680	see also 100 line			
111	EXT1	NM_000127.1	2081	cccatctacacacacagttt	213326	601681	see also 100 line			
112	EXT1	NM_000127.1	2166	ttctctacacacacagttt	213329	601689	see also 100 line			
113	EXT1	NM_000127.1	2171	tactctacacacacagttt	213330	601691	see also 100 line			
114	EXT1	NM_000127.1	2174	tactctacacacacagttt	213331	601692	see also 100 line			
115	F13A1	NM_000129.2	584	gtggaggaatctccagatgct	143366	736130	-	protein-glutamine gamma-glutamyl transferase	-	thrombophilic (血栓性静脈炎)、parahemophilia (パラ血友病)
116	F5	NM_000130.2	1056	tgcaggtctacacacacacaa	162592	560209	-	copper binding	-	
117	F8	NM_000132.2	1036	ttctctcgaagtcacacattct	162745	560360	-	-	-	
118	F8	NM_000132.2	1806	ttcgtcgtcgcctcctcttct	162770	560402	see also 117 line	-	-	
119	F8	NM_000132.2	2073	cagcatcattgcctcatttttg	162776	560408	see also 117 line	-	-	
120	FANCA	NM_000135.1	1617	gactctccagagatttctctca	301347	706954	-	-	-	aplastic anemia (再生不良性貧血)、Fanconi anemia (ファンconi 貧血)、Fanconi pancytopenia (ファンconi 全血球減少)
121	FANCO	NM_000136.1	1826	ttcttgacacagaccttcacaga	301422	669813	-	extracellular matrix structural constituent	-	Marfan syndrome (マルファン症候群)
122	FBN1	NM_000138.2	1176	agctccacagcttcacacacaa	144242	548411	-	-	-	acrocephalosyndactyl (ワールデンブルグ症候群)、Aort. syndrom (アール症候群)、Beare-Stevenson cutis gyrata syndrome (-), bladder cancer (膀胱癌)、craniofacial dysostosis (頭蓋顔面異骨症)、Jackson-Weiss syndrome (ジャクソン・ワイズ症候群)、Pfeiffer syndrome (プフィッシャー症候群)、fumarate deficiency (フマル酸不足症)、hereditary multiple leiomyoma (遺伝性多発性血管筋腫)、renal cell cancer (腎細胞癌)、fumarate hydratase (フマル酸脱水素)
123	FBN1	NM_000138.2	1499	ttcgtctatctctcacaattg	144256	548419	see also 122 line	-	-	
124	FBN1	NM_000138.2	6681	atgttgatgaatttttaagtc	144381	548501	see also 122 line	-	-	
125	FBN1	NM_000138.2	7465	ctccacacccctcgaatttttc	144394	548519	see also 122 line	-	-	
126	FECH	NM_000140.1	785	ggagacagagctgctcattcgt	164259	618950	-	Smad3/Sp-1 heterodimer	-	orthosporphyria erythropoietic (骨髄性プロトポルフィリア)
127	FCGR2	NM_000141.2	1571	ctctatcttggaattgaacttt	82241	502302	receptor activity, kinase related	-	-	
128	FH	NM_000143.2	167	ctcgaattgcagccacaaattcc	233545	617971	cell cycle	-	-	
129	FH	NM_000143.2	251	ggagctcagacgaacttaagaa	233554	617978	see also 128 line	-	-	
130	FH	NM_000143.2	254	atctcagatgaacttaagattg	233555	617979	see also 128 line	-	-	

図4.6 (続き)

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131	FH	NM_000143.2	406	atgagtgatctgagtgatga	233560	617963	see also 128 line	guanidinacetate N-methyltransferase deficiency (脂肪クアンジニチルトランスフェラーゼ欠損症)
132	GAMT	NM_000156.4	447	ctacctctgagctcaacttctg	214060	804087	—	—
133	GBE1	NM_000158.1	738	atccaatctactacgaagatca	202019	592961	—	transferase, transferring
134	GBE1	NM_000158.1	1877	caagagcctactgagtgaaaca	202062	593009	see also 133 line	adult polyglucosan body disease(-), Anderson disease(アンダーソン病)
135	GBE1	NM_000158.1	1879	cgagcctactgagtgaaaca	202063	593010	see also 133 line	—
136	GJB1	NM_000166.2	515	cactctgtgagcagctatgctc	263784	847363	—	Charcot-Marie-Tooth peripheral muscular atrophy(シャルコー-マリー-トゥース病), deafness(聴覚), Charcot-Marie-Tooth neuropathy(シャルコー-マリー-トゥース神経痛)
137	GJB1	NM_000166.2	837	ccgcctctctactgagtgacac	263786	847368	see also 136 line	connexon channel
138	GLI3	NM_000168.2	1648	atgttctgtgctgcatctggaag	4481	459713	transcription, regulator, or,	Greig craniohypoplasia syndrome(グレイ-ヘンリッヒ症候群), Pallister-Hall syndrome(パリスター-ホール症候群), postaxial polydactyly(趾後増過)
139	GLI3	NM_000168.2	2208	cccatcagcagcactattccaca	4488	459719	signal transduction	transcription factor
140	GLI3	NM_000168.2	2357	accgcagcagcagcaaatgagtg	4492	459721	see also 138 line	—
141	GLA	NM_000169.1	445	ctgagcctgagtgagttatcgaga	201987	593256	—	alpha-galactosidase
142	GLDC	NM_000170.1	394	tttgagcctgagcagcatgagga	225945	502985	—	glycine dehydrogenase
143	GLDC	NM_000170.1	848	tccagctgagcagcaatatgact	225956	502994	see also 142 line	(decarboxylating)
144	NR3C1	NM_000176.1	776	cgagcctctgttgatgataaag	8483	447229	transcription, regulator, or,	cortisol resistance from glucocorticoid receptor defect(コルチコイド抵抗性)
145	NR3C1	NM_000176.1	990	ctgcacccctctggatgataagc	8501	447234	receptor activity,	zinc binding
146	NR3C1	NM_000176.1	1550	gcgcacccctctgttgataaag	8512	447245	see also 144 line	—
147	NR3C1	NM_000176.1	1551	ccagcagcctctgttgataaag	8513	447246	see also 144 line	—
148	NR3C1	NM_000176.1	1553	cgagcagcctctgttgataaag	8514	447247	see also 144 line	—
149	NR3C1	NM_000176.1	1557	agcgcagcctctgttgataaag	8515	447248	see also 144 line	—
150	NR3C1	NM_000176.1	2265	ctgcagcagcctgttgataaag	8530	447264	see also 144 line	—
151	GSN	NM_000177.3	1454	tgagcagcagcagcagcagcagc	113915	523090	structural constituent of cytoskeleton	bladder transitional cell carcinoma(膀胱移行上皮癌), amyloidosis(アミロイドーシス)
152	GSN	NM_000177.3	1459	gcagcagcagcagcagcagcagc	113916	523092	see also 151 line	colorectal carcinoma(大腸癌), colorectal cancer(大腸がん), staxia talarigactasia(毛細血管拡張性運動失調症), endometrial cancer(子宮癌), colorectal cancer(結腸直腸癌), gastric
153	MSH6	NM_000179.1	3691	atgcagcagcagcagcagcagc	18801	451734	—	damaged DNA binding
154	MSH6	NM_000179.1	3886	atgcagcagcagcagcagcagc	18807	451742	see also 153 line	—

図46 (続き)

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					receptor activity, kinase related, signal transduction	hepatocyte growth factor receptor	hepatocellular carcinoma(肝癌), renal cell carcinoma(腎臓癌), esophageal cancer(食道 癌), papillary renal carcinoma(腎臓癌), astrocytic tumor(星状細胞腫)
175	MET	NM_000245.1	3190	ttgttaattgccgaagctgaagc	91088	508341	
176	MET	NM_000245.1	3465	agccttatcttccattccaaaga	91088	508349	
177	MET	NM_000245.1	3468	ctgtattgcaatttaactgaagt	91089	508350	
178	MET	NM_000245.1	3911	ttgttttgcgaagcactgattg	91113	508359	
179	MET	NM_000245.1	4294	atgtgaagcgtctacttttgaac	91128	508377	
180	MTIF	NM_000248.2	221	cagctactctctcaactcttagc	32278	461704	Tietz syndrome(タイゼツ症), Waardenburg syndrome(ワールデンブルグ症候群)
181	MTIF	NM_000248.2	668	agggaactcaacgctgtatttt	32290	461713	
182	MLH1	NM_000249.2	1735	ctgtctaacaggactactcttta	91706	508504	colorectal cancer(結直腸癌), colorectal carcinoma(大腸癌), ataxia telangiectasia(毛細血 管拡張性運動失調症), nonpolyposis colon cancer(非腫瘍性大腸癌), Turcot syndrome with glioblastoma(膠芽細胞腫)に伴う大腸がん症候 群, cerebral astrocytoma(大脳星状細胞腫), colorectal cancers(結直腸癌), Muir-Torres syndrome(Muir-Torres症候群), pancreatic cancer(膵臓癌), familial nervous system tumor syndromes(家族性神経系腫瘍症候群), gastric cancer(胃癌), glioblastoma(膠芽 腫), multiple café-au-lait spots with leukemia(白 血病におけるカフエオレ短), colorectal carcinoma(大腸癌), ataxia telangiectasia(毛細血 管拡張性運動失調症), nonpolyposis colon cancer(非腫瘍性大腸癌), colorectal cancers(結 直腸癌), Muir-Torres syndrome(Muir-Torres症 候群), pancreatic cancer(膵臓癌), skin
183	MSH2	NM_000251.1	1783	agcgcacagatgcattgttaaa	16380	451452	cell cycle
184	MSH2	NM_000251.1	2074	gccccaattatgagctaaatca	16392	451460	see also 183 line
185	MSH2	NM_000251.1	2076	cccaattatgagctaaatcaac	16393	451461	see also 183 line
186	MSH2	NM_000251.1	2349	aggttatcatctgctatctcaga	16408	451466	see also 183 line
187	MSH2	NM_000251.1	2412	accacattttacgaattactgc	16413	451471	see also 183 line
188	MTM1	NM_000252.1	213	tctcttaaaagccacataagc	192910	586507	phosphatase
189	MTM1	NM_000252.1	297	atctctcttttbaagacttgc	192913	586511	see also 188 line
190	MTM1	NM_000252.1	370	tctctatgctatgatactctg	192921	586517	see also 188 line
191	MTM1	NM_000252.1	374	atgctcagatgattctctgaaa	192922	586518	see also 188 line
192	MTM1	NM_000252.1	441	cagaagatagatgtttgagatcc	192925	586520	see also 188 line
193	MTM1	NM_000252.1	784	cagctctcttcgctatgattg	192937	586526	see also 188 line
194	MTP	NM_000253.1	2216	cagctatttatgctcaaaatgc	173590	570268	lipid transporter
195	MTP	NM_000253.1	2347	aggttctctgactctattgatt	173594	570274	see also 194 line
196	MTP	NM_000253.1	2348	gggtgtctgactctattgattt	173595	570275	see also 194 line

图46 (續上)

197	NM_000253.1	2350	MT	gctgcacatcactccattttcca	173596	5702716		methylinmyosin- Cdk mouse	methylmalonicaciduria(メチルマロンニッケアジジン 尿症)
198	NM_000253.1	2405	MTP	gttataaccctcgagaagata	173600	5702717			
199	NM_000255.1	257	MUT	gaacatatctcatcccttatcac	235110	619750	-		
200	NM_000255.1	547	MUT	tgaaagtctggctgctgatagg	235116	619758	see also 199 line		
201	NM_000259.1	1390	MYOBA	ggctcttcgcccaagcgctaca	93168	509668	-	myosin ATPase	
202	NM_000259.1	2342	MYOBA	cctcatcctggctgctactaccaga	93169	509691	see also 201 line		
203	NM_000259.1	2738	MYOBA	gtccgaagctgctaacgaattagg	93202	509709	see also 201 line		
204	NM_000259.1	2741	MYOBA	gtccagctgctgctaacgaattagg	93203	509711	see also 201 line		
205	NM_000280.1	4383	MYOTA	gttgttcgaagtaactcaatttgg	93506	509877	-	myosin ATPase	deafness(聴), Sennear-Usher syndrome(ゼン アー・アッシャー症候群)
206	NM_000283.2	715	NAGLU	gcccaacagatcacccgacttac	200984	592630	-	alpha-N-acetylglucosaminidase	mucoopolysaccharidosis(ムコ多糖体症) Sanfilippo syndrome(サンフィリッポ症候群)
207	PICH	417	PTCH	ctgtgcctgtgtagcgaattttca	245625	633183	receptor activity, signal transduction		nevoid basal cell carcinoma syndrome(母斑性基底細胞癌症候群), basal cell nevus syndrome(基底細胞母斑症候群), medulloblastoma(髄芽腫), familial neurovisceral system tumor syndromes(家族性神経末梢神経線維症), skin cancer(皮膚癌)
208	PICH	920	PTCH	ggagctgctgctgctgaatgaac	245640	633200	a cell cycle		
209	PICH	2197	PTCH	cccacacgaaccttactatcaccc	245658	633227	see also 207 line		
210	PICH	2466	PTCH	tgtctctggctgctgctcctttatgg	245661	633229	see also 207 line		bladder transitional cell carcinoma(膀胱移行上皮癌), pilocytic astrocytomas(ピストロサイトマ), brain stem glioma(脳幹星細胞腫), neurofibromatosis(神経線維腫症), Watson syndrome(ワトソン症候群), squamous cell carcinoma/sciric(扁平上皮細胞癌), nerve sheath tumors(神経鞘腫), pheochromocytoma(褐色細胞瘤), visual pathway and hypothalamic glioma(視覚伝達路および視床下部神経膠腫), familial nervous system tumor syndromes(家族性神経系腫瘍)
211	NFI	260	NF1	tctcagcgcagctctccataaaa	294444	665363	cell cycle	enzyme inhibitor	
212	NM_000267.1	487	NFI	atctctctgtgctgctccacaagg	294454	665370	see also 211 line		
213	NM_000267.1	656	NFI	aatctcaatctcaatctcaatctg	294457	665375	see also 211 line		
214	NM_000267.1	1478	NFI	tgtgattctgtcctcagcttggc	294469	665397	see also 211 line		
215	NM_000267.1	1623	NFI	agatcaacacgctcaaatatttaa	294475	665406	see also 211 line		
216	NM_000267.1	4971	NFI	atttttcacagagwtgctcaaacct	294514	665512	see also 211 line		
217	NFI	5092	NFI	ggagctcagcaatcgtctctaata	294517	665517	see also 211 line		
218	NM_000267.1	5093	NFI	ggactctacatcagctttttaaac	294518	665518	see also 211 line		
219	NM_000267.1	6995	NFI	ggactctacatcagctttttaaac	294578	665593	see also 211 line		
220	NM_000267.1	7094	NFI	aaactctcaatctcgtatgtagc	294580	665584	see also 211 line		
221	NM_000267.1	8016	NFI	tgtctctcagctgctcaaatctaac	294610	665616	see also 211 line		
222	NFI		NFI	tgcacagctatcataatttttttaa	294619	665620	see also 211 line		

図46 (続き)

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223	NFI	NM_000267.1	8458	tgatatacctcgaacattcaacc	294630	665628	see also 211 line			apand/moma(上衣細胞腫), neurofibromatosis(神経線維腫), CNS Tumors(中枢神経腫瘍), meningioma(meningioma), nerve sheath tumors(神経鞘腫瘍), malignant mesothelioma(悪性中皮腫), mesothelioma(中皮腫), astrocytic tumors(星状細胞腫), familial nervous system tumor syndromes(家族性神経系腫瘍症候群)
224	NFI	NM_000267.1	8628	ctcagcgttcaaacgttaataagc	294637	665634	see also 211 line			
225	NF2	NM_000268.2	1223	atgcacagagattcattataaa	291993	661873	cell cycle			
226	NF2	NM_000268.2	1284	ctcaagccttgcgttgaataagc	291997	661875	see also 225 line			oculocerebrorenal syndrome of Lowe(眼頭腎症候群)
227	OCRL	NM_000276.3	1124	tctgagatctgctcttatttt	196543	598985	phosphatase			
228	OCRL	NM_000276.3	1531	caagcgcacacgaataaagatttt	196559	599001	see also 227 line			
229	OCRL	NM_000276.3	2147	tggatagatgcacaaagtactctc	196574	599023	see also 227 line			
230	OCRL	NM_000276.3	2150	atcgaagcgaagattctcttg	196575	599024	see also 227 line			
231	PAX2	NM_000278.2	1449	caggatctcagacacatcaaatc	8862	701931	transcription_regulat			optic nerve coloboma with renal disease(腎臓病に伴う視神経欠損)
232	PAX2	NM_000278.2	1450	aggatctcagacacatcaaatca	8863	701932	see also 231 line			
233	PAX2	NM_000278.2	1503	ctgacccttgagcttgaattgaag	8864	701935	see also 231 line			
234	PAX6	NM_000280.1	534	atcgcgaatttcccgattctgc	8904	447556	transcription_regulat			Wilms tumor(ウィルムス腫瘍), aniridia(無虹彩), keratitis(角膜炎), meckel-bleb anomaly(嚢芽腫), albinism(アルビノ症候群)
235	PAX6	NM_000280.1	748	ctctaccacacgaataataaac	8913	447564	see also 234 line			
236	PAX6	NM_000280.1	826	atcgcgcacacgcgtatctatac	8917	447567	see also 234 line			
237	PAX6	NM_000280.1	828	atcgcgcacacgcgtatctatac	8918	447568	see also 234 line			
238	PAX6	NM_000280.1	830	atcgcgcacacgcgtatctatac	8919	447570	see also 234 line			
239	PAX6	NM_000280.1	831	atcgcgcacacgcgtatctatac	8920	447571	see also 234 line			
240	PAX6	NM_000280.1	845	atcgcgcacacgcgtatctatac	8921	447574	see also 234 line			
241	PAX6	NM_000280.1	1140	agatcgcacacgcgtatctatac	8925	447579	see also 234 line			
242	PAX6	NM_000280.1	1180	atcgcgcacacgcgtatctatac	8926	447580	see also 234 line			
243	PAX6	NM_000280.1	1507	atcgcgcacacgcgtatctatac	8933	447585	see also 234 line			
244	PAX6	NM_000280.1	1512	tatcgcgcacacgcgtatctatac	8934	447586	see also 234 line			
245	PCBD	NM_000281.1	296	ggccacactctatcgacacagtag	112354	715632	transcription co-activator			hyperphenylalaninemia(高フェニルアラニン血症), propionyl-CoA carboxylase deficiency(プロピオニル-CoAカルボキシラーゼ欠損症), propionic acidemia(プロピオン酸血症)
246	POCA	NM_000282.1	315	agctccacacgcgtatctatac	95850	511332	propionyl-CoA carboxylase			
247	POCA	NM_000282.1	771	tactctctatataagaatacagg	95867	511346	see also 246 line			
248	PCPD	NM_000285.1	627	agcgcacacgcgtatctatac	162019	698237	metalloboxypopt			
249	PCPD	NM_000285.1	628	ggccacacactctatcgacacagtag	162020	698238	see also 248 line			
250	PEX12	NM_000286.1	614	atcgcgcacacgcgtatctatac	134552	689537	zinc binding			peroxisome biogenesis disorder(ペルオキシソーム生合成障害), Zellweger syndrome(ゾルウェーグー症候群)

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273	RET	NM_000323.2	3346	gcccctccctcccaaatgattga	98994	513394	—	thyroid cancer(甲状腺癌), papillary thyroid carcinoma(甲状腺乳頭癌), multiple endocrine neoplasia(多発性内分泌腫瘍), thyroid carcinoma(甲状腺癌), ganglioneuromatosis of the alimentary tract(神経節神経腫症), Hirschsprung disease(先天性ヒルシュシュプルング病), medullary thyroid carcinoma(髄質甲状腺癌), pheochromocytoma and familial amyloid-producing thyroid carcinoma(褐色細胞腫及びアミロイド産生甲状腺腫瘍).
274	RET	NM_000323.2	3504	ctcagcggcaaaatgaagca	99000	513390	see also 273 line	
275	RLBP1	NM_000326.3	1135	atgtgtcgaagccctcttgag	179790	573082	—	retinitis pigmentosa(色素性網膜炎)
276	RPE65	NM_000329.1	547	caagtgtctcttgcaacatgt	135280	741196	—	diathrophy(シストロフィー), amaurosis congenita of Leber(レーバー先天性黒内障), retinitis pigmentosa(色素性網膜炎)
277	RPE65	NM_000329.1	782	tgtgtctgagctcccaaatatc	135291	741203	see also 276 line	
278	RPE65	NM_000329.1	783	tgtgtctgagctcccaaatatc	135292	741204	see also 276 line	
279	RPE65	NM_000329.1	792	tcccaacatctctttttttg	135294	741206	see also 276 line	
280	RPE65	NM_000329.1	1149	ttagaagaatgactctctttg	135303	741213	see also 276 line	
281	SCA1	NM_000332.1	946	accagaagcggagacaagaatgc	54643	475439	—	molecular function
282	SCA1	NM_000332.1	2518	tcccaagcggagactctcaac	54653	475456	unknown	spinocerebellar ataxia(小脳失調), schizophrenia(精神分裂病)
283	SCA7	NM_000333.1	1354	atgtgtctgcaacactgaatc	284078	689105	molecular function	spinocerebellar ataxia(小脳失調)
284	SLC12A1	NM_000338.1	896	atgtgtgtgtgatacaccacaga	256801	640521	unknown	Bartter syndrome(バーター症候群)
285	SLC12A1	NM_000338.1	2402	aactacagctggaactatcacatga	256845	640553	symporter	
286	SLC12A1	NM_000338.1	2594	agacatccgagctgttttaaaa	256856	640558	see also 284 line	
287	SLC2A2	NM_000340.1	904	ggcattctctatgaatgattat	259120	643348	—	diabetes mellitus(糖尿病), Fanconi syndrome(ファンコニ症候群), hepatic glycogenosis(肝糖原病), diabetes(糖尿病)
288	SOX9	NM_000346.2	1545	gtccagcgaacgcacatcacaga	40842	468061	sugar porter specific RNA polymerase II transcription factor	campomelic dysplasia(屈曲肢形成症)
289	SPTB	NM_000347.3	1206	tcccggatgaagcccaacaatca	119235	524092	transcription_regulat or structural constituent of cytoskeleton	spherocytosis(球形赤血球症), breast cancer(乳癌), prostate cancer(前立腺癌), pseudohemaphroditism(假性半陰陽), pseudovaginal perineosrotal hypospadias(尿道下裂)
290	SRD5A2	NM_000348.2	613	cacaagaatgcttttttaagtat	223957	612219	electron transporter	

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291	ABCA4	NM_000350.1	897	tggcggaggaatatactcga	68854	450816	—	adenoctriphosphatase	cone-rod dystrophy (遺伝性シトローン) see related macular degeneration (加齢黄斑変性症), macular dystrophy (遺伝性黄斑変性症), retinitis pigmentosa (色素性網膜炎), Stargardt disease (ステルガルト病)
292	ABCA4	NM_000350.1	1639	tggctcctgctgaatttgaag	68873	450841	see also 291 line	—	—
293	ABCA4	NM_000350.1	1874	tggagattctgcgaactcttgg	68979	450945	see also 291 line	—	—
294	ABCA4	NM_000350.1	3750	atcattgtgcgaactact	68937	450977	see also 291 line	—	—
295	ABCA4	NM_000350.1	4722	ggcaaatctggtctcaatgaac	68912	450900	see also 291 line	—	—
296	TIMP3	NM_000382.3	1683	gacggcagctctccattctg	284751	603681	apoptosis	metalloendopeptidase inhibitor	Sorsby fundus dystrophy, pseudoinflammatory (—)
297	TSC1	NM_000368.2	2292	ctccggacacagctgctttact	305839	712554	cell cycle, signal transduction	—	bladder transitional cell carcinoma (膀胱移行上皮癌), tuberous sclerosis (神経性硬化症), renal cell carcinoma (腎細胞癌), squamous cell carcinoma (扁平上皮細胞癌), familial nervous system tumor syndromes (家族性神経系腫瘍症候群)
298	TSC1	NM_000368.2	2427	atgaagatgaatctgaattaca	305841	712555	see also 297 line	—	—
299	UMPS	NM_000373.1	1311	ggctccctggaagctgaacc	212768	601412	—	transferase, transferring glycosyl groups	oryctoaciduria (オロチン・酸尿症)
300	VDR	NM_000376.1	813	tgttcaattacagctccnaag	13923	449829	transcription regulator or receptor activity	VDR/RXR alpha heterodimer	vitamin D-resistant rickets (低リン酸血症ビタミンD抵抗性くる病)
301	WT1	NM_000378.2	1322	caagctctgaatgaagatcttt	13945	449857	transcription regulator or cell cycle	—	desmoplastic small round cell tumor (線維形成性円形細胞腫瘍), Wilms tumor (ウィルムス腫瘍), bladder cancer (膀胱癌), Denys-Drash syndrome (デニース・ドランシュ症候群), Frasier syndrome (フラスィエ症候群), WAGR syndrome (WAGR症候群), leukemia (白血病), nephroblastoma (腎芽細胞腫), squamous cell carcinoma (扁平上皮細胞癌), malignant xanthinuria (キサンチン尿症)
302	XDH	NM_000379.2	3815	tccgcgaactgcccaacagaag	164749	562863	—	TGF-associated factor 125	xanthinuria (キサンチン尿症)
303	MD1	NM_000381.1	654	tacagccctcgtctgattgac	133903	558397	—	—	Optiz/BBB syndrome (オプティズ病)
304	MD1	NM_000381.1	822	gagcgcctatcacaaatga	133905	558400	see also 303 line	—	—
305	MD1	NM_000381.1	824	gtggcgtctgacaattgaag	133906	558401	see also 303 line	—	—
306	BLMH	NM_000386.2	553	gacaagcttgacgctgtttact	187933	581695	—	carboxypeptidase	Alzheimer disease (アルツハイマー病)
307	BLMH	NM_000386.2	557	aggttgacgctgtttacttc	187934	581696	see also 306 line	—	—
308	BLMH	NM_000386.2	563	acagctgtttattctcttgat	187935	581697	see also 306 line	—	—

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309	CASR	NM_000388.2	1578	ccgctctgcagccctctaatag	241438	gpr, receptor activity, signal transduction	metabotropic glutamate, GABA-B-like receptor	familial hypocalciuric hypercalcaemia(家族性低カルシウム尿性高カルシウム血症), hyperparathyroidism(副甲状腺機能亢進症), hypocalcaemia(低カルシウム血症), hypocalciuric hypercalcaemia(低カルシウム血症/高カルシウム血症)
310	CHM	NM_000390.1	1129	cggatagcgaacactcatttt	216773	707689	RAS-protein geranylgeranyltransferase	chloroderemia(先天性網膜色素変性)
311	ABCG2	NM_000392.1	3261	caaccacagccagctctgac	70298	492270	organic anion transporter	hyperbilirubinemia(結合型高ビリルビン血症)
312	ABCG2	NM_000392.1	3262	accacacagccagctctgac	70297	492271	see also 311 line	
313	ABCG2	NM_000392.1	3834	tctgctctgagcgaataact	70302	492284	see also 311 line	
314	ABCG2	NM_000392.1	4072	ctgctctctgaactctgaag	70306	492294	see also 311 line	
315	COL5A2	NM_000393.2	2668	gccaacctggcactctgttttg	288332	659739	Homobox protein PKNOX1	Ehlers-Danlos syndrome(エラー-ダンロス症候群)
316	CRYAA	NM_000394.2	150	cggcagagccctcttttgatg	299510	659900	structural constituent of eye lens	
317	CTSK	NM_000396.2	249	atgaactctctgcctcttaatt	187880	581636	cathepsin K	rheumatoid arthritis(関節リウマチ), pycnodysostosis(ピクノディオステオシス)
318	CTSK	NM_000396.2	480	tgcactatcgaaagaaagat	187885	581647	see also 317 line	
319	CYBB	NM_000397.2	807	aacccctctatgactctgaatg	226516	613664	hematopoietic-associated factor	atherosclerosis(粥状硬化症), chronic granulomatous disease(慢性肉芽腫症)
320	CYBB	NM_000397.2	1212	agctatgagctgctgctgaat	226523	613680	see also 319 line	
321	EXT2	NM_000401.1	1122	tggctgctgagcctctttctag	213370	601718	signal transduction, cell cycle	chondrosarcoma(軟骨肉腫), hereditary multiple exostoses(遺伝性多発性外骨腫), multiple exostoses(多発性外骨腫)
322	GM2A	NM_000405.3	237	tctctggataactctgctgaag	298547	672482	activator protein	GM2 gangliosidosis(GM2ガンリオリシドシス)
323	GP2	NM_000408.1	1010	ctgtgcgaataatgactgataa	145580	548897	phosphatidylglycerol-3-phosphate dehydrogenase	diabetes mellitus(糖尿病), diabetes(糖尿病)
324	GP2	NM_000408.1	1012	tgtgcgaataatgactgataa	145581	548898	see also 323 line	
325	HLCS	NM_000411.3	2698	accgcagaaatggctctaatg	232175	617097	biotin-[Propionyl]-CoA-carboxylase (ATP-hydrolyzing) lyase	multiple carboxylase deficiency(多発性カルボキシル化欠損症)
326	HLCS	NM_000411.3	2927	gtgaactggccacagatatta	232178	617101	see also 325 line	
327	LAMA2	NM_000426.2	633	atgagctgactgcactctatt	290696	661415	structural molecule	congenital muscular dystrophy(先天性筋ジストロフィー)
328	LAMA2	NM_000426.2	2467	ctgagctctcaactcaatctac	290748	661462	see also 327 line	
329	LAMA2	NM_000426.2	3888	caactctactctgctgaattatc	290774	661488	see also 327 line	

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330	LJAA2	NM_000426.2	6908	tacttgctgcacacactgactatg	290849	661555	see also 327 line	
331	LJAA2	NM_000426.2	6972	tgcacacacacactgactggtg	290850	661560	see also 327 line	
332	LJAA2	NM_000426.2	7525	tccctgctgcacacactgactg	290873	661578	see also 327 line	
333	LJBP2	NM_000428.1	2453	agcgcacacacacacactgctg	133567	549909	-	Marfan syndrome(マルファン症候群)
334	LJBP2	NM_000428.1	3397	caactgctgctgcactgactgact	133571	549920	see also 333 line	
335	LJBP2	NM_000428.1	4281	cggaactgcactgactgactgacg	133579	549926	see also 333 line	
336	PAFAH1B	NM_000430.2	568	cagaaacacacacactgactgacaa	200114	591784	signal transduction	lissencephaly(滑脳症), Miller-Dieker syndrome(Miller-Dieker 症候群)
337	PAFAH1B	NM_000430.2	591	tgcactgactgactgactgactcttc	200115	591785	see also 336 line	
338	PAFAH1B	NM_000430.2	720	gaactcttgcactgactgactgacaa	200117	591794	see also 336 line	
339	PAFAH1B	NM_000430.2	902	tccactgctgcactgactgactg	200123	591801	see also 336 line	
340	PAFAH1B	NM_000430.2	1177	ctctctctgcactgactgactgacaa	200127	591810	see also 336 line	
341	PAFAH1B	NM_000430.2	1181	ctctctctgcactgactgactgacaa	200128	591811	see also 336 line	
342	PAFAH1B	NM_000430.2	1572	gactctctgcactgactgactgcttc	200140	591820	see also 336 line	
343	PAFAH1B	NM_000430.2	1677	gactctctgcactgactgactgact	200146	591822	see also 336 line	
344	NOTO3	NM_000435.1	1005	gactctgctgcactgactgactgctg	149247	538219	receptor activity, transcription, regulat or	cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy(偏 癱塞病もしくは白質症に伴う動脈硬化)
345	PAX3	NM_000438.3	696	aacgcctgcctgcctgagagagaaa	8869	447542	transcription, regulat or, apoptosis	rhabdomyosarcoma(横紋状筋肉腫), alveolar rhabdomyosarcoma(筋芽状横紋状筋肉腫), craniofacial-deafness-hand syndrome(顔蓋 顔面黄盲症), Wardenburg syndrome(ワールデ ンブルグ症候群)
346	PCSK1	NM_000439.3	754	cagagctgactgctgactgatttaat	183033	576748	-	diabetes mellitus(糖尿病), obesity and endocrinopathy(肥満及び内分泌障害、 diabetes(糖尿病))
347	PCSK1	NM_000439.3	1306	gcctctgactgactgacaaactgctc	183044	576765	see also 346 line	
348	PDE6A	NM_000440.1	171	tgcctctgccaactgactgactgacaa	197651	590210	signal transduction	retinitis pigmentosa(色素性網膜炎)
349	SLC26A4	NM_000441.1	1934	tgcatttgcactgactgactgactg	260159	643730	phosphodiesterase sulfate portor	enlarged vestibular aqueduct(前庭水嚢膨張) congenital cancer(大腸癌), multiple drug resistance(多剤耐性), colorectal cancers(結腸 直腸癌)
350	ABCB4	NM_000443.2	2472	caagcttttttcacgactgactgacag	69678	491910	-	atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病), diabetes(糖尿病)
351	PONI	NM_000446.3	796	gctctctgaacacgctgactgactg	197585	589761	phosphatase	bone lymphocyte syndrome(不全)リン球壊 滅
352	PONI	NM_000446.3	967	gctctctgactgactgacacactctc	197591	589765	see also 351 line	肝, MHG class II deficiency(MHICラスII欠損症)
353	RFK5	NM_000449.2	250	ggctctcgactgacacttgcactgacg	10490	468251	transcription, regulat or	diabetes mellitus(糖尿病), diabetes(糖尿病), maturity-onset diabetes of the young(若年性の diabetes mellitus(糖尿病))
354	RFK5	NM_000449.2	613	gcctgcactgccaactgactgactgac	10498	468255	see also 353 line	成人糖尿病(糖尿病)
355	TCF2	NM_000458.1	209	caactgctgcactgacaaactgctc	12922	449435	transcription, regulat or	
356	TCF2	NM_000458.1	1429	caactgacactgctgcactgactgact	12936	449360	see also 355 line	

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387	COL10A1	NM_000483.2	1922	atcttttgatgacgcctctataag	287841	659257	see also 386 line	-	diffuse esophageal leiomyomatosis (びまん性食道平滑筋腫), Alport syndrome (アルポート症候群)
388	COL4A5	NM_000495.3	4667	ctccctgctatgatacgaagaataa	288263	659606	-	structural constituent of eye lens	cataract (白内障)
389	CRYBB2	NM_000496.1	321	caaaccagagcagaagatctccc	289564	659933	-	phosphatase, transcription regulator	renal dysplasia (腎形成異常)
390	EYA1	NM_000503.3	747	ctcccatgacgcagcaactaa	204958	595733	-	-	-
391	EYA1	NM_000503.3	754	tgacacgcagcaactaaacagagc	204959	595736	see also 390 line	-	-
392	EYA1	NM_000503.3	1274	cagcagcactctcgtctatccc	204973	595749	see also 390 line	-	-
393	EYA1	NM_000503.3	1308	agcctcagcagcagcagctatatt	204974	595751	see also 390 line	-	-
394	EYA1	NM_000503.3	1309	ggctcagctgcacagctattata	204975	595752	see also 390 line	-	-
395	EYA1	NM_000503.3	1662	ctggtctctcagcacaagatatt	204983	595756	see also 390 line	-	-
396	EYA1	NM_000503.3	1663	tggctctctcagcacaagatatt	204984	595757	see also 390 line	-	-
397	EYA1	NM_000503.3	1959	gggttaaaagatgattcaacacc	204990	595765	see also 390 line	-	-
398	GDNF	NM_000514.2	780	acacgtgattaccattatcttaag	169225	566029	signal transduction	growth factor	Hirschsprung disease (先天性ヒルシュシュプルグ病), Parkinson disease (パーキンソン病)
399	GDNF	NM_000514.2	783	ctgtgttaccattatcttaagaan	169227	566030	see also 398 line	-	-
400	HOXA13	NM_000522.2	34	atctcaaccacacgtctcattctct	329689	697112	transcription regulator	-	-
401	HOXA13	NM_000522.2	849	cgcctgacgaagcccaaatgact	329694	697118	see also 400 line	ion channel, carbamoyltransferase	-
402	OTC	NM_000531.3	1004	tggctcagatgataaacaataca	180058	573200	-	-	hyperammonemia (高アンモニア血症)
403	PLP1	NM_000533.2	255	agcctaattgacagctctttctcc	282352	682127	-	structural molecule	Pelizaeus-Merzbacher disease (ペリゼウス・メルツバハ病), spastic paraplegia (痙性脊髄痙攣)
404	PM51	NM_000534.2	490	ttgtcgaagctcaactgcaact	35428	463715	cell cycle, transcription regulator	-	colorectal cancer, or (結腸直腸癌), colorectal cancer (大腸癌), chondrocytic telangiectasia (毛細血管拡張性運動失調症), hereditary nonpolyposis colon cancer (HNPCC) (遺伝性非多発性大腸癌), colorectal cancers (結腸直腸癌)
405	PM51	NM_000534.2	2390	ggcactgaaagccaattatgt	35487	463714	see also 404 line	DNA binding	-
406	RHO	NM_000539.2	332	agccctgctgacctctctctatgg	238421	629104	gpcr, receptor activity, signal transduction	G-protein coupled photoreceptor	congenital stationary night blindness (先天性夜盲症), retinitis pigmentosa (色素性網膜炎)
407	TSHB	NM_000549.1	150	ttgtatgacacgggagatcaatg	170144	567025	gpcr, receptor beta-2	Thyroid hormone receptor beta-2	Hypothyroidism (甲状腺機能低下症), chondro dysplasia (軟骨形成不全), brachydactyly (短指症)
408	GDF5	NM_000557.2	975	agcagagctaacgttttgacatt	131507	565568	signal transduction	protein binding	-
409	C8A	NM_000562.1	1496	tcctgtgtgtatcgttttttga	312037	760675	-	complement	-
410	IGFBP5	NM_000589.1	1041	gcgcgttttcctccacgaagaag	124917	528747	signal transduction	insulin-like growth factor binding	-
411	IGFBP5	NM_000589.1	1405	tgtgaccccaagaggtttctaca	124920	528761	see also 410 line	-	-

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412	IGFBP5	NM_000599.1	1407	gagcagcgaagatgcttcaag	124921	528752	see also 410 line
413	IGFBP5	NM_000599.1	1410	accgcgaagatgcttcaagaa	124922	528753	see also 410 line
							breast cancer(乳癌), Jackson-Weiss syndrome(Jackson-Weiss症候群), Li-Fraumeni cancer(線維肉腫), Pfeiffer syndrome(プファイアー症候群), Pfeiffer type acrocephalosyndactyl(プファイアー型短頭症), leukemia(白血病), Kallmann syndrome(カ
414	FGFR1	NM_000604.2	1657	ttgaagctcagctgatttaaac	82211	502270	receptor activity, kinase related, signal transduction
415	SLC11A2	NM_000617.1	217	tttttttttttttttttttttttt	266351	656771	iron transporter
416	SLC11A2	NM_000617.1	1562	acttttttttttttttttttttt	266392	656795	nitric oxide synthase
417	NOS1	NM_000620.1	2007	agggatgatttttttttttttt	121788	526894	growth factor binding, transcription, regulator
418	NOS1	NM_000620.1	4908	aggttttttttttttttttttt	121821	526940	diabetes(糖尿病)
419	NOS2A	NM_000625.3	2166	ctcttttttttttttttttttt	121848	526961	diabetes(糖尿病)
420	LTBP1	NM_000627.1	1017	atgtcttttttttttttttttt	125052	709545	receptor activity, transcription, regulator
421	SOD2	NM_000636.1	563	cagcttttttttttttttttt	162345	561865	heavy metal
422	SOD2	NM_000636.1	564	agcttttttttttttttttttt	162346	561866	4-aminobutyrate aminotransferase
423	GSR	NM_000637.1	290	tgtgttttttttttttttttt	166871	564154	alpha 1-adrenergic receptor
424	GSR	NM_000637.1	1048	tgtgttttttttttttttttt	166894	564176	atherosclerosis(粥状硬化症)
425	ABAT	NM_000663.2	763	gggggcttttttttttttttt	218139	606075	receptor activity, kinase related, signal transduction
426	ADRA1B	NM_000679.2	214	gcccacttttttttttttttt	237748	623475	receptor activity, kinase related, signal transduction
427	ADRA1B	NM_000679.2	999	gatttttttttttttttttttt	237755	623484	receptor activity, kinase related, signal transduction
428	ADRB1	NM_000684.1	457	gggttttttttttttttttttt	237781	623522	receptor activity, kinase related, signal transduction
429	ACTP2	NM_000686.3	710	agcttttttttttttttttttt	176672	623601	receptor activity, kinase related, signal transduction
430	ACTP2	NM_000686.3	1141	cgagtttttttttttttttttt	176683	623617	apoptosis, signal transduction
431	ATP1A2	NM_000702.1	700	ctgacttttttttttttttttt	72624	494392	sodium/potassium-exchanging
432	ATP1A2	NM_000702.1	814	ccgcaatttttttttttttttt	72628	494393	hemiplegic migraine(片麻痺性片頭痛)
433	ATP4A	NM_000704.1	1819	ccggacttttttttttttttt	73068	494682	plasma membrane cation-transporting ATPase

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434	BCQDHA	NM 000709.2	406	gcgcgctctctcttcacgaagc	225415	611917	-	alpha-ketoacid dehydrogenase voltage-gated calcium channel	maple syrup urine disease(メーブルシロップ原症)
435	CACNA1B	NM 000718.1	4111	caaggcagctcagtttgattgatg	74787	498932	channel	see also 435 line	
436	CACNA1B	NM 000718.1	4515	ggcgctgcctccatcaagaagc	74791	498923	see also 435 line		
437	CACNA1B	NM 000718.1	5361	ctgcgtctctcagcctacagttac	74800	498934	see also 435 line		
438	CACNA1B	NM 000718.1	5362	tcctctggcgcctcagcttgatca	74801	498935	see also 435 line		
439	CACNA1B	NM 000718.1	5370	ggcgcttccttcgaattgaactg	74803	498937	see also 435 line		
440	CACNA1B	NM 000718.1	5463	agcctcctctgcctcagctgaagc	74806	498939	see also 435 line		
441	CACNA1B	NM 000718.1	5464	ggcgctggcttcacatacaatcgc	74807	498940	see also 435 line		
442	CACNA1C	NM 000719.3	305	aacacacacaggtctccaactctgg	138479	544689	channel	voltage-gated calcium channel	
443	CACNA1C	NM 000719.3	3548	agatttgactctgcaactgtctct	138515	544735	see also 442 line		
444	CACNA1C	NM 000719.3	6371	ctctgtagaagcgctcttgatttc	138528	544759	see also 442 line		
445	CACNA1D	NM 000720.1	375	agcactaaccccaagcagcaaaaa	138532	544775	channel	alcoholism(アルコール依存症)	
446	CACNA1D	NM 000720.1	461	atcgagagagcctcacttgattat	138533	544779	see also 445 line		
447	CACNA1D	NM 000720.1	462	tcgagagagcctcacttgattat	138534	544780	see also 445 line		
448	CACNA1D	NM 000720.1	466	agagagagcctcacttgattat	138535	544781	see also 445 line		
449	CACNA1D	NM 000720.1	933	tcctcagagcctcttcttgatttc	138547	544800	see also 445 line		
450	CACNA1D	NM 000720.1	3792	agccttcgagatctcacttgatttc	138594	544848	see also 445 line		
451	CACNA1D	NM 000720.1	3793	gctcttcgagatctcacttgatttc	138595	544849	see also 445 line		
452	CACNA1D	NM 000720.1	4004	atcgagagagcctcacttgatttc	138601	544853	see also 445 line		
453	CACNA1D	NM 000720.1	5006	tcctcagagagcctcacttgatttc	138819	544868	see also 445 line		
454	CACNA1D	NM 000720.1	5081	tgctctcagagagcctcacttgatttc	138821	544869	see also 445 line		
455	CACNA1D	NM 000720.1	5094	ccctcagagagcctcacttgatttc	138822	544870	see also 445 line		
456	CACNA1D	NM 000720.1	5236	tggagagagcctcacttgatttc	138830	544873	see also 445 line		
457	CACNA1E	NM 000721.1	370	ctgcttcctcggagagagatga	138855	544902	channel	voltage-gated calcium channel	
458	CACNA1E	NM 000721.1	429	ggcgcttcctcggagagatga	138857	544903	see also 457 line		
459	CACNA1E	NM 000721.1	919	tcctcagagagcctcacttgatttc	138864	544906	see also 457 line		
460	CACNA1E	NM 000721.1	922	atgagagagcctcacttgatttc	138865	544907	see also 457 line		
461	CACNA1E	NM 000721.1	1101	cagctgcctcagcactcaacttc	138869	544912	see also 457 line		
462	CACNA1E	NM 000721.1	2196	gtgcttcgctcacttcacttc	138701	544935	see also 457 line		
463	CACNA1E	NM 000721.1	4087	agagctcagcactcaacttc	138713	544951	see also 457 line		
464	CACNA1E	NM 000721.1	4092	ggcgagagcactcaacttc	138715	544952	see also 457 line		
465	CACNA1E	NM 000721.1	5369	cagagctgcgagcactcaacttc	138731	544967	see also 457 line		
466	CACNA1E	NM 000721.1	5370	agagctgcgagcactcaacttc	138732	544968	see also 457 line		
467	CACNA1E	NM 000721.1	5429	gcctcagagcactcaacttc	138733	544970	see also 457 line		
468	CACNA1E	NM 000721.1	5548	tcggcgagcactcaacttc	138734	544971	see also 457 line		
469	CACNA1E	NM 000721.1	6950	tcggagagcactcaacttc	138741	544983	see also 457 line		
470	CACNA1E	NM 000721.1	8263	cagagctgcgagcactcaacttc	138746	544986	see also 457 line		

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					channel, receptor, activity, signal transduction				channel, receptor, activity, signal transduction			
493	GABRA1	NM_000806.3	1607	178341	571681	GABA-A receptor	Parkinson disease (パーキンソン病)					
494	GABRA1	NM_000806.3	1608	178342	571682	see also 493 line						
495	GABRA3	NM_000808.2	994	178405	571671	benzodiazepine receptor	-					
496	GABRA3	NM_000808.2	996	178406	571672	see also 495 line						
497	GABRA3	NM_000808.2	1018	178407	571674	see also 495 line						
498	GABRA3	NM_000808.2	1570	178412	571684	see also 495 line						
499	GABRA4	NM_000809.2	320	178418	571692	benzodiazepine receptor	-					
500	GABRA4	NM_000809.2	1671	178456	571726	see also 499 line						
501	GABRA4	NM_000809.2	1675	178458	571727	see also 499 line						
502	GABRA5	NM_00810.2	1650	178486	571759	GABA-A receptor	alcoholism (アルコール依存症)					
503	GABRA6	NM_00811.1	599	178501	571782	benzodiazepine receptor	alcoholism (アルコール依存症)					
504	GABRB1	NM_00812.2	290	178534	572443	GABA-A receptor	-					
505	GABRB1	NM_00812.2	789	178542	572459	see also 504 line						
506	GABRB1	NM_00812.2	791	178543	572460	see also 504 line						
507	GABRB1	NM_00812.2	509	178545	572464	see also 504 line						
508	GABRB2	NM_00813.1	238	178555	572479	receptor, activity, signal transduction	alcoholism (アルコール依存症)					
509	GABRB2	NM_00813.1	295	178557	572482	see also 508 line						
510	GABRB2	NM_00813.1	308	178558	572483	see also 508 line						
511	GABRB3	NM_00814.3	449	178606	572935	receptor, activity, signal transduction	alcoholism (アルコール依存症)					
512	GABRG2	NM_00816.2	649	178720	571925	benzodiazepine receptor	alcoholism (アルコール依存症), schizophrenia (精神分裂症)					
513	GABRG2	NM_00816.2	650	178721	571926	see also 512 line						
514	GABRG2	NM_00816.2	1615	178744	571963	see also 512 line						
515	GAD1	NM_00817.1	926	233743	618087	-	diabetes (糖尿病), Parkinson disease (パーキンソン病), schizophrenia (精神分裂症)					
516	GAD2	NM_00818.1	503	233776	618132	-	diabetes mellitus (糖尿病), diabetes (糖尿病), Parkinson disease (パーキンソン病)					

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517	GAD2	NM_000818.1	508	tgtgtgaagttctgcagatca	233777	618133	see also 516 line		
518	GAD2	NM_000818.1	509	gtgaagttctgtgatatac	233778	618134	see also 516 line		
519	GAD2	NM_000818.1	622	atgcattgcacacactccaa	233781	618143	see also 516 line		
520	GGOX	NM_000821.2	1423	gccccacgacactttgatatt	233168	484418		lipase	Vitamin K-dependent coagulation defect(ビタミンK依存性血液凝固因子異常)
521	GGOX	NM_000821.2	1880	ctggctatctcgcagatga	233175	484437	see also 520 line		
522	GLRB	NM_000824.2	1399	tctgcattgttgaaactaac	179372	572682	receptor activity, signal transduction	glycine-inhibited chloride channel	
523	GLRB	NM_000824.2	1409	ttagaagcttaccagaagattt	179373	572683	see also 522 line		
524	GRIA2	NM_000826.1	617	gcacgtgcagaagctctaac	244269	632173	channel,		
525	GRIA2	NM_000826.1	2590	ggacacactcttgctgattct	244305	632213	signal transduction	potassium channel	
526	GRIA2	NM_000826.1	2677	aagcgcagcgcgaacgaatga	244308	632215	see also 524 line		
527	GRIA2	NM_000826.1	2680	ggccgaagcgcgaacgaatgaag	244307	632216	see also 524 line		
528	GRIA1	NM_000827.2	2405	tgccttgaaatccagtaaac	244250	632157	receptor activity, channel,	potassium channel	
529	GRIA3	NM_000828.2	291	aggccctttgattctctcaag	244311	622076	receptor activity, channel,		
530	GRIA3	NM_000828.2	313	ttagtggattctttctgaaac	244312	622078	signal transduction		
531	GRIA3	NM_000828.2	898	aaatgaagagatatacaattc	244324	622080	see also 529 line		
532	GRIA3	NM_000828.2	1128	aaatgaagacacacaaagatcac	244334	622084	see also 529 line		
533	GRIA3	NM_000828.2	1358	gaactgaagcattttatctctc	244337	622101	see also 529 line		
534	GRIA3	NM_000828.2	1359	actgaagacaaattatcaccatgc	244338	622102	see also 529 line		
535	GRIA3	NM_000828.2	2808	gcacaaagacaccbaaacattta	244338	622138	see also 529 line		
536	GRIA4	NM_000829.1	247	tctgttccagctattcttagag	244618	632238	receptor activity, channel,	potassium channel	
537	GRIA4	NM_000829.1	826	atgtagctctgagaagactaga	244638	632257	signal transduction		
538	GRIA4	NM_000829.1	2272	acgcccaagcttctctcaatag	244673	632282	see also 536 line		
539	GRIA4	NM_000829.1	2675	caggtatctgcttgattgctgc	244674	632291	see also 536 line		
540	GRIK1	NM_000830.2	634	caccacattacactctgcatcc	244389	632292	receptor activity, channel,		
541	GRIK1	NM_000830.2	1944	gaagatgaacagagatgattaaa	244407	632325	signal transduction		schizophrenia(精神分裂病)
542	GRIK1	NM_000830.2	2209	taacacacactgattataaac	244417	632328	see also 540 line		
543	GRIK1	NM_000830.2	2669	gaatccacacattgattatgt	244423	632334	see also 540 line		
544	GRIK2A	NM_000833.2	2925	atagatgtcacattgaagaaag	165897	583328	receptor activity, channel,	magnesium binding	
545	GRIK2A	NM_000833.2	4458	cccttcggacctctcaaacact	165916	583374	signal transduction		
							see also 544 line		

573	IL7	NM_000890.2	846	tcgtgctgctgcgaattgaag	167530	584610	interleukin-7 receptor ligand	-
574	IMPDH1	NM_000893.2	1359	caccctcgagagtcgaatcac	220399	607127	-	-
575	IMPDH1	NM_000893.2	2085	gaccatctgcgcgcgaattgag	220409	607142	see also 574 line	-
576	ITGA4	NM_000895.2	4194	tacaaatcatcttcacaaaga	249139	635660	cell adhesion receptor	-
577	ITGA4	NM_000895.2	4199	atctatcttcacaaagaaaaa	249140	635661	signal transduction	-
578	ITGB6	NM_000898.3	595	tgcacacctcttcagatatttc	249477	636098	cell adhesion receptor	-
579	ITGB6	NM_000898.3	2130	cttcacaaatctccatgataatg	249511	636137	signal transduction	-
580	ITGB6	NM_000898.3	2273	aactgcacaacaggaacacatcc	249517	636140	see also 578 line	-
581	KCNJ5	NM_000890.3	1328	accttgaaagaaggtctctcga	260595	644201	G-protein enhanced inward rectifier potassium channel, gpr	-
582	IT4H	NM_000895.1	1001	tgcgaatacattctgctgaatg	157520	558128	zinc binding	-
583	MAOB	NM_000898.3	322	atccacaccagatctgattcttga	225859	612498	electron	Parkinson disease(パーキンソン病)
584	KITLG	NM_000899.1	456	tcttgaaagcttgatgaattatt	168209	565204	signal transduction	-
585	KITLG	NM_000899.1	911	gtcttcacagagcagcttgaatat	168220	565223	see also 584 line	-
586	MME	NM_000902.2	2300	ctgcgcgaagaattcatcatga	158064	558608	-	leukemia(白血病), Alzheimer disease(アルツハイマー病)
587	MME	NM_000902.2	2302	tcgcgaagaattcatcatgaat	158065	558609	see also 586 line	-
588	NPR2	NM_000907.1	487	tacacggagcctcaattgaact	94941	510470	kinase related, receptor_activity, gpr,	-
589	NPR2	NM_000907.1	900	accctccactctcgaatcgaag	94945	510477	signal transduction	-
590	NPR2	NM_000907.1	1330	gcacccactctcgcgataaac	94951	510485	see also 588 line	-
591	NPR2	NM_000907.1	2404	ctctcgcgcgaacatgactgc	94974	510514	see also 588 line	-
592	NPY2R	NM_000910.2	736	atgcgcgcacgatcaaccaatttt	176060	571265	neuropeptide Y receptor	-
593	P4HA1	NM_000917.1	833	cagagacatcatgtactactaaa	222271	608618	procollagen- proline, 2- oxoglutarate-4- dioxygenase	-
594	P4HA1	NM_000917.1	1674	aactgcgaacatctgacttgaag	222303	608651	-	-
595	PAM	NM_000919.2	963	ctcgcagcttcctcttgatgctc	163768	560971	see also 593 line	-
596	PAM	NM_000919.2	1573	aaagagagagcgcctctgctgac	163904	560993	-	-
597	PC	NM_000920.2	1148	ggcagcgcgaacatcactcactc	95828	511462	see also 595 line	-
598	PC	NM_000920.2	2300	tgcagcgcgcctccatcacatcc	95835	511475	-	Leigh necrotizing encephalopathy(リ-病変性脳)
599	PDE3A	NM_000921.2	2112	aagaaatctgcgcctcatcttca	198054	590063	cGMP-inhibited cyclic-nucleotide phosphodiesterase	-
600	PDE3A	NM_000921.2	2363	cgagatctgcagctgatttataa	198067	590069	signal transduction	-

601	PDE3A	NM_000921.2	2367	tctgcacgaatgaattccacatg	198068	590070 see also 599 line				
602	PDHB	NM_000925.1	770	aagcttcacacagctcctatctaa	225397	771138	transcription_regulat or,	pyruvate dehydrogenase (lipoamide)	-	
603	PGR	NM_000926.2	2826	ctggatgctcatcctgcacaaagc	9185	447896	receptor activity,	steroid hormone receptor Smad3/Sp-1 heterodimer	-	goldilich sensitivity(コリジチン過敏症), multiple drug resistance(多剤耐性)
604	ABOB1	NM_000927.2	2536	aactgaagctgcctatttttg	69493	491830	-	-	-	-
605	ABOB1	NM_000927.2	3056	ttgtctgcacagcactgaaga	69504	491841	see also 604 line	-	-	-
606	PLCB4	NM_000933.2	489	atccagaagtaactgaagcaatg	198348	590872	-	-	-	-
607	PLCB4	NM_000933.2	781	tctctgcacagatagaagatc	198358	590882	see also 606 line	-	-	-
608	PLCB4	NM_000933.2	797	ctgcacagatagaagatctttt	198360	590883	see also 606 line	-	-	-
609	PLCB4	NM_000933.2	1372	cagcaaatctaacacagtcacaga	198376	590898	see also 606 line	-	-	-
610	PLCB4	NM_000933.2	1421	ggagatctctctgaaacaaagc	198379	590903	see also 606 line	-	-	-
611	PLCB4	NM_000933.2	2094	cccaagatttagcagtcgaatg	198402	590927	see also 606 line	-	-	-
612	PLCB4	NM_000933.2	2097	cacatttatgcctgaattgaat	198404	590928	see also 606 line	-	-	-
613	PLCB4	NM_000933.2	2568	taccacacattttctcaatt	198425	590947	see also 606 line	-	-	-
614	PLCB4	NM_000933.2	2702	gacattgaacattatgactatgc	198431	590953	see also 606 line	-	-	-
615	PLD2	NM_000935.1	1423	gawgaatgaagaagcaatttt	222200	609535	-	-	-	-
616	POLP2B	NM_000938.1	197	cacatctctgtccaaagatttt	36277	484642	transcription_regulat polymerase III	-	-	-
617	POLP2B	NM_000938.1	727	tcttcacacccacagatctat	36292	484663	see also 616 line	-	-	-
618	POLP2B	NM_000938.1	728	tccacacccacagatctatctg	36293	484664	see also 616 line	-	-	-
619	POLP2B	NM_000938.1	739	cactatctatagctgctcatgc	36294	484666	see also 616 line	-	-	-
620	POLP2B	NM_000938.1	1725	tctctatctacacagatctttt	36333	484689	see also 616 line	-	-	-
621	POLP2B	NM_000938.1	1726	tctctatctacacagatctttg	36334	484690	see also 616 line	-	-	-
622	POLP2B	NM_000938.1	1890	ctctatctacacagatcttttga	36341	484713	see also 616 line	-	-	-
623	POLP2B	NM_000938.1	2320	gactacacagctctgagatctc	36355	484730	see also 616 line	-	-	-
624	POLP2B	NM_000938.1	2323	tcacagctctgctgactatctc	36356	484731	see also 616 line	-	-	-
625	PPP3R1	NM_000945.2	675	tccctctatctatagatctgataa	121311	552665	phosphatase	-	-	-
626	PRMT1	NM_000946.1	149	cacgtgtaattttctctacact	208653	599403	-	calmodulin inhibitor	-	-
627	PRMT1	NM_000946.1	258	tgtatgaagccagctatctct	208653	599408	see also 626 line	-	-	-
628	PRMT1	NM_000946.1	281	ccagacacccatcaaccacatc	208657	599410	see also 626 line	-	-	-
629	PRMT2	NM_000947.1	1105	aagtttgataagttactctta	36952	464989	-	DNA primase	-	-
630	PRMT2	NM_000947.1	1154	aagtcgaagagcagactatcaca	36953	464992	see also 629 line	-	-	-
631	RRM1	NM_001033.2	1488	acctggagcaacctcaatgcagc	226191	612911	-	ribonucleoside- diphosphate reductase	-	-
632	RRM2	NM_001034.1	442	tcccatcgatccatcatatc	226228	612952	-	ribonucleoside- diphosphate reductase	-	-
633	RRM2	NM_001034.1	443	ccccctatcgatccatgatctct	226229	612953	see also 632 line	-	-	-

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							receptor activity, channel,					ventricular tachycardia(心室頻拍症), arrhythmogenic right ventricular dysplasia(不整 脈症)性右心室右形成不全症)
634	RYR2	NM_001003.1	2933	tgtctcgtttgaagatcaaca	122407	553142	signal transduction	receptor				
635	RYR2	NM_001003.1	4440	atgtctctctgagctgattaca	122450	553176	see also 634 line					
636	RYR2	NM_001003.1	4442	gtctctctctgagctgattaca	122451	553176	see also 634 line					
637	RYR2	NM_001003.1	13550	gagctctctctgagctgattaca	122655	553343	see also 634 line					
638	RYR2	NM_001003.1	13885	tgtctctctctgagctgattaca	122670	553349	see also 634 line					
639	SCN1B	NM_001037.2	429	caacccatgctctgaagaagctcc	282232	647174	channel	voltage-gated sodium channel				epilepsy(てんかん)
640	SLC6A3	NM_001044.2	1732	tgtctctgcttgcagctattgaccc	256035	640137	-	dopamine sodium symporter				alcoholism(アルコール依存症)
641	SLC12A2	NM_001048.2	1019	tgtctctgcttgcagctattgaccc	256692	640584	-	symporter				-
642	SLC12A2	NM_001048.2	1022	ctgtctgctcaagctgtttattgac	256693	640586	see also 641 line					-
643	SLC12A2	NM_001048.2	2079	caagctgtttctgaagctattgac	256724	640629	see also 641 line					-
644	SLC12A2	NM_001048.2	2273	atgtctctctctgaagctattgac	256737	640643	see also 641 line					-
645	SLC12A2	NM_001048.2	2275	ggctctctctctgaagctattgac	256738	640644	see also 641 line					-
646	SLC12A2	NM_001048.2	2276	ggctctctctctgaagctattgac	256739	640645	see also 641 line					-
647	SLC12A2	NM_001048.2	2853	atgtgtgtgtgtgtgtgtgtgtgt	256755	640669	see also 641 line					-
648	SULT1C1	NM_001056.2	829	ttcctttattgtactgctgaatgac	217775	605789	-	-				-
649	TACR2	NM_001057.1	439	agccaccagagctgtttattgac	175980	629182	receptor activity, signal transduction	tachykinin receptor				-
650	TACR1	NM_001058.2	938	agccaccagagctgtgtcaaatgag	175975	629175	receptor activity, signal transduction	-				-
651	TBXAS1	NM_001061.2	928	atcattctctctctctgaatgac	222083	609394	-	-				thrombocyte synthetase deficiency(血小板シ ン合成酵素欠損症)
652	TKT	NM_001064.1	431	agctcactctctctctgtctattgac	153885	554577	-	-				Wernicke-Korsakoff syndrome(ウェルニッケ-コ ルサコフ症候群)
653	TOP2A	NM_001067.2	320	atgtgaattgtgtctctctctct	42514	489461	-	-				colorectal cancer(大腸癌), esophageal cancer(食道癌), lung cancer(肺癌), small cell lung cancer(肺癌), colorectal cancer(結腸直腸 癌)
654	TOP2A	NM_001067.2	1219	cctgaagctgtgtctctctctct	42546	489484	see also 653 line	DNA topoisomerase (ATP-hydrolyzing)				-
655	TOP2A	NM_001067.2	2702	atgtgaagctgtgtctctctct	42567	489510	see also 653 line	-				-
656	TOP2B	NM_001068.2	417	agctcactctctctctctctctct	42659	489590	-	DNA topoisomerase				-
657	TOP2B	NM_001068.2	1050	agctcactctctctctctctctct	42679	489619	see also 656 line	-				-
658	TOP2B	NM_001068.2	1055	agctcactctctctctctctctct	42680	489620	see also 656 line	-				-
659	TOP2B	NM_001068.2	1058	atgtgaattgtgtctctctctct	42681	489621	see also 656 line	-				-
660	TOP2B	NM_001068.2	1282	ctgtctctctctctctctctctct	42684	489623	see also 656 line	-				-
661	TOP2B	NM_001068.2	1285	ggctcactctctctctctctctct	42685	489624	see also 656 line	-				-
662	TOP2B	NM_001068.2	1254	ctctctctctctctctctctctct	42704	489653	see also 656 line	-				-
663	TOP2B	NM_001068.2	1995	ggctcactctctctctctctctct	42704	489653	see also 656 line	-				-
664	TOP2B	NM_001068.2	2242	ggctcactctctctctctctctct	42710	489671	see also 656 line	-				-
665	TOP2B	NM_001068.2	2242	ggctcactctctctctctctctct	42710	489671	see also 656 line	-				-
666	TOP2B	NM_001068.2	2248	ttcctgaagctgtgtctctctct	42712	489672	see also 656 line	-				-

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665	TOP2B	NM_001068.2	2447	ctcagccctccctgattatcttc	42718	469874	see also 656 line
666	TOP2B	NM_001068.2	3174	agcagatccctcaagctctaaac	42739	469705	see also 656 line
667	TOP2B	NM_001068.2	3200	aagccctcttccattcagctgaag	42741	469705	see also 656 line
668	TOP2B	NM_001068.2	3274	actctctccctccagctgattaga	42742	469713	see also 656 line
669	TOP2B	NM_001068.2	4179	agcattctccctcaacaactatg	42764	469737	see also 656 line
670	TOP2B	NM_001068.2	4604	aagtcctccctccctccagaaagaag	42769	469749	see also 656 line
671	TOP2B	NM_001068.2	4785	cagtcaggctccctccagaaagaag	42772	469752	see also 656 line
672	VCAM1	NM_001078.2	695	tctctgtttccctccagctaaata	318025	692717	-
673	VCAM1	NM_001078.2	702	tcacagcagctcaattccacttgc	318026	692718	beta also 672 line
674	VCAM1	NM_001078.2	703	tcacagcagctcaattccacttgc	318027	692719	see also 672 line
675	VCAM1	NM_001078.2	705	ccagctcaattccacttccacttgc	318028	692720	see also 672 line
676	VCAM1	NM_001078.2	2141	ttgactctccacttccagatgttga	318062	692756	see also 672 line
677	PDE5A	NM_001083.2	2193	atcagctgacacatcactcttgc	111263	520831	Signal transduction
678	PDE5A	NM_001083.2	2321	tcagcagctccactccactcttgc	111265	520835	see also 677 line
679	PDE5A	NM_001083.2	2323	ccagcactagcagctgacacttgc	111267	520837	see also 677 line
680	PDE5A	NM_001083.2	2326	actctgacagctccacttccagag	111268	520838	see also 677 line
681	PDE5A	NM_001083.2	2601	atgcacagctgttctctagcttgc	111277	520848	see also 677 line
682	ACLY	NM_001096.2	1357	tcagatctccactccactctcttgc	71584	493200	-
683	ACLY	NM_001096.2	1358	ggagctccactccactccacttgc	71585	493201	see also 682 line
684	ACLY	NM_001096.2	1770	accacacagcagctcttcttgc	71590	493205	see also 682 line
685	ACPP	NM_001099.2	929	tcacagctctccactgacttctac	195118	599348	protein tyrosine phosphatase transforming growth factor-beta receptor
686	ACVR1	NM_001105.2	621	tcacagagctgcctgtctcaacag	71608	493238	receptor activity, kinase related signal transduction receptor activity, kinase related transforming growth factor-beta receptor
687	ACVR2B	NM_001106.2	232	ctctgtctgctgactgactcaact	71740	493335	receptor activity, kinase related transforming growth factor-beta receptor
688	ADAM10	NM_001110.1	753	ttgtatgtatgactctctctaat	154556	555676	kinase related
689	ADAM10	NM_001110.1	1281	tcgttaaacatcattgaactcaat	154575	555692	see also 688 line
690	ADAM10	NM_001110.1	1287	aacpctaacatcattgaactcaact	154576	555694	see also 688 line
691	ADAM10	NM_001110.1	1718	attatctgaagatgacacacttgc	154593	555701	see also 688 line
692	ADAM10	NM_001110.1	1738	tcgagcaacacttcaacacactga	154594	555705	see also 688 line
693	ADAM10	NM_001110.1	2393	ttcaatgcagcttcagctttgataa	154611	555716	see also 688 line
694	ADAM10	NM_001110.1	2396	atctctgcctgactgactgataatgc	154612	555717	see also 688 line
695	ADAR	NM_001112.2	2938	agctcttccttcagctttctctctca	48089	471673	-
696	ADAR	NM_001112.2	3407	ggagctatcgaccctctgctattgc	48102	471683	see also 695 line
697	ADCY7	NM_001114.1	2920	cccgagctctcaactgcttctca	164984	562798	-
698	ADCY8	NM_001115.1	3318	tcgctatcgaaagcactgacttgc	165005	562832	guanylate cyclase
699	ADCY8	NM_001115.1	4079	ctcgccctcgagaacttaaacagc	165017	562859	guanylate cyclase

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700	ADCV8	NM_001115.1	4192	ctggacacagatgttcacat	165021	562864	see also 698 line		
701	ADCV8	NM_001115.1	4245	ctggacatattgtcttcatt	165023	562868	see also 698 line		
702	ADCV8	NM_001115.1	4557	tctccagatgtttacagata	165033	562878	see also 698 line		
703	ADCV8	NM_001115.1	4558	tctccagatgtttacagatat	165034	562879	see also 698 line	peptidyl-prolyl is-	
704	ADCV9	NM_001116.1	1866	tggcgacagctgcacacattt	165073	562940	signal transduction	trans isomerase	-
705	ADCV9	NM_001116.1	1867	tggcgacagctgcacacatttg	165074	562941	see also 704 line		
706	ADCV9	NM_001116.1	2733	tggcgacagctgcacacatttgc	165090	562956	see also 704 line		
707	ADD1	NM_001119.3	673	ctcagctctctacacattatc	115165	526444	-	-	-
708	ADD1	NM_001119.3	786	atcattctctacagagatagtt	115171	526448	see also 707 line		
709	ADD1	NM_001119.3	1131	tctctattacattcaaacctgtt	115181	526456	see also 707 line		
710	ADD1	NM_001119.3	1358	taactgctccctctctgataacc	115183	526458	see also 707 line		
711	ADD1	NM_001119.3	1590	tccagctcaatgttgacataaga	115186	526467	see also 707 line		
712	ADK	NM_001232.2	448	tggatgcattgggttagataaat	165108	598761	kinases related	-	-
713	ADK	NM_001232.2	884	tgacaaagctgttgcagctaaaga	165126	598778	see also 712 line		
714	ADSS	NM_001126.2	1337	atgctcatatcatcaatgatttt	108151	518587	-	adenylosuccinate	-
715	APIB1	NM_001127.2	1085	gtggccttcgcacatcaatct	267381	650284	-	synthase	-
716	APIB1	NM_001127.2	1089	cccttgcacatcaatcatctatc	267382	650286	see also 715 line	meningioma(メニジオーマ)	-
717	APIB1	NM_001127.2	1740	tgcggacacctgactacatctac	267385	650291	see also 715 line		
718	APIB1	NM_001127.2	1741	gcggacacctgactacatctact	267386	650292	see also 715 line		
719	APIB1	NM_001126.4	555	gcacaaacattgcagctatttag	267397	650314	-	protein transporter	-
720	APIG1	NM_001128.4	616	tctctatgcacacagctatttag	267400	650316	see also 719 line		
721	APIG1	NM_001128.4	1063	tgcgaatttgaggttttaga	267415	650332	see also 719 line		
722	APIG1	NM_001128.4	1074	gcgttttaacatttttagacg	267416	650337	see also 719 line		
723	APIG1	NM_001128.4	1599	tgcacaaagcgagagattttacg	267433	650355	see also 719 line		
724	APIG1	NM_001128.4	1601	gcacaaagcgagagattttacg	267434	650356	see also 719 line		
725	APIG1	NM_001128.4	2649	ggacacatcacacagcttttgctt	267463	650365	see also 719 line	lipogenesis	-
726	ALOX12B	NM_001138.1	865	ggatttcattcttcacacact	164359	592122	-	-	-
727	ANGPT1	NM_001146.3	561	aaattatatacagcttcacactg	171038	679381	signal transduction	-	-
728	ANGPT1	NM_001146.3	581	atggcagctgcttcacactcttc	171039	679382	see also 727 line	-	-
729	ANGPT1	NM_001146.3	1910	ggcgcagctattctctacttctc	171088	679421	see also 727 line	-	-
730	ANK2	NM_001148.2	2882	ggacacatgcagctgagcagac	286599	682378	signal transduction	-	long QT syndrome(QT延長症候群)
731	ANK2	NM_001148.2	2876	tgcacaaagctgctctctctct	286600	682379	see also 730 line	-	-
732	ANK2	NM_001148.2	4334	tgtgtctacacagctatttccaac	286639	682418	see also 730 line	-	-
733	ANXA6	NM_001155.2	2080	tccggcggagatattgttcgaag	138007	544176	-	-	-
734	APAF1	NM_001160.2	1182	ccagagagcttctcattatttt	72108	493853	apoptosis	-	-
735	APAF1	NM_001160.2	1184	gaagctgttccactattatttga	72109	493852	see also 734 line	-	melanoma(メラノーマ)
736	APAF1	NM_001160.2	1186	gaagctgttccactattatttga	72110	493854	see also 734 line	-	-
737	APAF1	NM_001160.2	1343	aaagatgtttacagatttcattaat	72114	493859	see also 734 line	-	-
738	APAF1	NM_001160.2	1345	aaagatgtttacagatttcattaat	72115	493860	see also 734 line	-	-
739	APAF1	NM_001160.2	2208	tgcagcgaacacattctctact	72146	493877	see also 734 line	-	-
740	APAF1	NM_001160.2	4046	cagacgtctctacacaaaggaac	72208	493917	see also 734 line	-	-

741	NUDT2	NM_001163.3	389	gagcctgagctgagctatctctc	192231	717104	phosphatase, apoptosis	-
742	APBA1	NM_001163.2	1541	ttcccaacactcagctgagctc	267862	680106	protein transporter	Alzheimer disease(アルツハイマー病)
743	BIRC2	NM_001166.2	2186	gatttttgcctgagcttaagc	311123	676776	signal transduction	-
744	ARHGAP5	NM_001173.1	823	atgatacctaaattgcttgct	192519	518704	apoptosis, kinase related	-
745	ARHGAP5	NM_001173.1	1166	actctggaacactgagctgaata	192529	518718	signal transduction	-
746	ARHGAP5	NM_001173.1	1221	atacctgagctgagcaacaga	192531	518720	see also 744 line	-
747	ARHGAP5	NM_001173.1	2504	tgctgacatccctgaatttta	192566	518768	see also 744 line	-
748	ARHGAP5	NM_001173.1	2582	tgagatacctaaacacaattt	192569	518772	see also 744 line	-
749	ARHGAP5	NM_001173.1	2627	actgactggaatgctgactgt	192572	518776	see also 744 line	-
750	ARHGAP5	NM_001173.1	2722	tgctgacacgcagacagatant	192576	518777	see also 744 line	-
751	ARHGAP5	NM_001173.1	2723	tgctgacagctgagctgacatct	192577	518778	see also 744 line	-
752	ARHGAP5	NM_001173.1	2781	agctgacacgcagctgacacatt	192579	518782	see also 744 line	-
753	ARHGAP5	NM_001173.1	2782	agcgatacactgcttctacattt	192580	518783	see also 744 line	-
754	ARHGAP5	NM_001173.1	3408	agctctacacactctaaactctaa	192592	518808	see also 744 line	-
755	ARHGAP5	NM_001173.1	3409	tgctctccactcttaaacctaa	192593	518809	see also 744 line	-
756	ARHGAP5	NM_001173.1	3410	actctaaacacttaaacctaaac	192594	518810	see also 744 line	-
757	ARHGAP5	NM_001173.1	3425	actctaaacactgctgacttaag	192595	518811	see also 744 line	-
758	ARHGAP5	NM_001173.1	3603	agagctctctctgctgagattta	192599	518816	see also 744 line	-
759	ARHGAP5	NM_001173.1	3781	tatgataccacacacacactata	192611	518824	see also 744 line	-
760	ARHGAP5	NM_001173.1	4426	acctctgacactatgacttatctc	192629	518844	see also 744 line	-
761	ARHGAP5	NM_001173.1	4429	ctgttaacactatgatatctaga	192630	518845	see also 744 line	-
762	ARHGAP5	NM_001173.1	4510	gagacacacttctctctctgttt	192636	518851	see also 744 line	-
763	ARHGAP5	NM_001173.1	4780	cgagatctctctgatatctataga	192645	518862	see also 744 line	-
764	ARHGAP5	NM_001174.2	3049	cgagagacactctccctatgaca	252534	665231	signal transduction	-
765	ARHGAP5	NM_001174.2	3051	gagacactctctctctctgacac	252535	665232	see also 764 line	-
766	ARHGAP5	NM_001174.2	3264	ggagctgactgctcaactcaattc	252549	665235	see also 764 line	-
767	ARNTL	NM_001178.2	535	jaacctcatctgaggttagaata	981	441789	transcription/regulat	-
768	ARNTL	NM_001178.2	536	acctctcatctgaagcttagaata	982	441790	or,	-
769	ARNTL	NM_001178.2	537	ccctcatctgaagcttagaata	983	441791	see also 767 line	-
770	ARNTL	NM_001178.2	1620	gagctatgctctgacttcttcata	1016	441817	see also 767 line	-
771	BAPX1	NM_001189.2	41	tccacagcactctccacagaaga	1363	442040	transcription/regulat	-
772	BCL2L1	NM_001191.2	430	taagctctgagctcagcttagctgc	31005	676924	apoptosis	-
773	BCL2L1	NM_001191.2	432	caagctctgagctcagcttagctgc	31006	676925	see also 772 line	-
774	PRDM1	NM_001198.2	767	acgggctgacactctactctactc	9804	464901	transcription/regulat	-
775	PRDM1	NM_001198.2	768	cgagctgacactctactctctaca	9805	464902	see also 774 line	-
776	PRDM1	NM_001198.2	807	tgcccaacacactctctctctgtc	9806	464903	see also 774 line	-
777	PRDM1	NM_001198.2	2025	cagctggagacagcctctctcaat	9840	464931	see also 774 line	-
778	PRDM1	NM_001198.2	2135	agctctgacacagcagcttgatgc	9843	464933	see also 774 line	-

812	CDG27	NM_001256.2	345	tacgtcttcgaacaatttgtat	307763	675223	-	-	-	-
813	CDG27	NM_001256.2	341	accagaagcctttagttcaatt	307766	675230	see also 812 line	-	-	-
814	CDG27	NM_001256.2	610	agccagatcctgacacaaattt	307770	675234	see also 812 line	-	-	-
815	CDG27	NM_001256.2	611	accgagctctgacacaaattt	307771	675235	see also 812 line	-	-	-
816	CDG27	NM_001256.2	911	accacaaactctgctgaatttat	307785	675256	see also 812 line	-	-	-
817	CDG27	NM_001256.2	1006	gaagctgagctatttcaaacac	307790	675259	see also 812 line	-	-	-
818	CDH13	NM_001257.2	1190	atgtcatctaccacaattatccc	139531	545556	-	calcium ion binding	breast cancer (乳癌), lung cancer (肺癌), non-small-cell lung cancer (非小細胞肺癌)	-
819	CDK6	NM_001259.2	420	atcaagactgaccactacttg	76173	497794	kinase, related, cell cycle	protein serine/threonine kinase	-	-
820	CDK6	NM_001259.2	608	ggctctgcccatctatgattt	76180	497798	see also 819 line	-	-	-
821	CDK6	NM_001259.2	609	gcttccgcagctatgatgttc	76181	497799	see also 819 line	-	-	-
822	CDKN2C	NM_001262.2	1260	ggggagcactctagacactact	294098	674758	kinase, related, cell cycle	-	dysplastic nevus syndrome (ディズラスチック・ニーバス症候群)	-
823	CDKN2C	NM_001262.2	1262	aggagcctgagcagactactac	294099	674759	see also 822 line	-	-	-
824	CDKN2C	NM_001262.2	1265	acctctagacacactactacttg	294100	674761	see also 822 line	-	-	-
825	CDKN2C	NM_001262.2	1366	acctctagacacactactacttg	294101	674762	see also 822 line	-	-	-
826	CDKN2C	NM_001262.2	1336	tctctctcgagtttgaactctg	294104	674767	see also 822 line	-	-	-
827	CDL1	NM_001263.2	1176	atctctcaaatctctgttaagc	165228	598556	signal transduction	phosphatidate cytidyltransferase	-	-
828	CHC1L	NM_001268.2	1163	tactctgagcagcaactatattat	129841	553860	-	-	-	-
829	CHC1L	NM_001268.2	1167	atgctctacatattgattatctac	129843	553861	see also 828 line	-	-	-
830	CHC1L	NM_001268.2	1920	aacatcttgactctgacacacac	129862	553897	see also 828 line	-	-	-
831	CHC1	NM_001269.2	289	gtccccagcgcagctgctaaac	24332	748887	cell cycle transcription, regulat	guanylyl-nucleotide release factor	-	-
832	CHD1	NM_001270.1	1904	accacacgtcttaaatattat	18113	450615	transcription, regulat or	chromatin binding	-	-
833	CHD1	NM_001270.1	2480	aacacacagctatantatgaatc	18140	450628	see also 832 line	-	-	-
834	CHD1	NM_001270.1	2492	caggagcctctacacacactaat	18141	450630	see also 832 line	-	-	-
835	CHD1	NM_001270.1	2493	aggagcctctacacacactaat	18142	450631	see also 832 line	-	-	-
836	CHD1	NM_001270.1	3559	gcgtttatcagcgcctataaga	18176	450665	see also 832 line	-	-	-
837	CHD1	NM_001270.1	3569	aagagctataagaatttgttgg	18177	450666	see also 832 line	-	-	-
838	CHD4	NM_001273.1	4170	gacacacagctcactactactgt	2213	442892	transcription, regulat or	zinc binding	rheumatoid arthritis (関節リウマチ)	-
839	CHD4	NM_001273.1	4257	aaggctctgcggagatataaga	2214	442894	see also 838 line	-	-	-
840	CHK1	NM_001274.2	223	aagtctaacctctctctataga	76833	498139	kinase, related, cell cycle, signal transduction	protein serine/threonine kinase	-	-
841	CHK1	NM_001274.2	735	tccctgtgaactctactctctc	76852	498164	see also 840 line	-	-	-
842	CHK	NM_001271.1	923	ttgtattttctctatctcgt	206466	598098	kinase related	signal transducer	-	-
843	CHK	NM_001271.1	938	atctctcttaagaagattatctc	209467	598099	see also 842 line	-	-	-
844	CHUK	NM_001276.2	779	tccgcagctctgagattataga	76933	498248	kinase related	transcription factor	-	-
845	CHUK	NM_001276.2	841	caggagcagctctgacttagcag	76935	498249	see also 844 line	-	-	-

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846	GHUK	NM_001278.2	1449	akgttaagtctctctgagataa	76558	498278	see also 844 line		
847	GLON6	NM_001286.1	691	tacgaagatcgaatttaactto	263417	647057	signal transduction		
848	CLUC1	NM_001288.3	847	ggggaagacagcagctactgaac	263482	647125	channel	voltage-gated chloride channel	Alzheimer disease(アルツハイマー病)
849	LD82	NM_001290.1	144	ctccttgcgcctctttatagg	30448	461162	transcription_regulat		
850	LD82	NM_001290.1	192	cagagtaacgaatcctgagctg	30450	461163	or		
851	LD82	NM_001290.1	327	atgacacaagcagatcactatcg	30453	461172	see also 845 line		
852	LD82	NM_001290.1	328	tggccaagaagcgctacactatcg	30454	461173	see also 845 line		
853	LD82	NM_001290.1	498	cgggaagccactcttttaaccagc	30465	461180	see also 845 line		
854	LD82	NM_001290.1	1052	ggagcagaagcgtactantactg	30476	461185	see also 845 line		
855	LD82	NM_001290.1	1053	agagcagaagcgtactcactctg	30477	461186	see also 845 line		
856	LD82	NM_001290.1	1060	aaagctaaactcagctagttagaa	30478	461188	see also 845 line		
857	LD82	NM_001290.1	1154	aaagcccgctggcagcgaaccc	30482	461189	see also 845 line		
858	CNGA3	NM_001298.1	1346	gggttatccgtgtgttttactctc	107955	571887	channel,		
859	CPD	NM_001300.3	744	gtgtctccgcaggaacgaatttg	185792	579830	signal transduction		achondroplasia(軟骨形成不全症)
860	CPD	NM_001300.3	745	tgtgtctccgcaggaacgaatttg	185793	579831	see also 859 line		
861	CPD	NM_001300.3	794	caagtatcagcaagcactctttt	185795	579832	see also 859 line		
862	CPD	NM_001300.3	796	gtgtatcagaacactccttttga	185796	579833	see also 859 line		
863	CPD	NM_001300.3	1121	tctgtatcgtttgttaactcttga	185807	579847	see also 859 line		
864	CPD	NM_001300.3	1221	ctctgtgtgtgtgtttttatctga	185811	579852	see also 859 line		
865	CPD	NM_001300.3	2840	tctgtgtgtgtgtgtttttatctga	185882	580006	see also 859 line		
866	CPD	NM_001300.3	3504	cugcagcagaagatctatagctga	185896	580028	see also 859 line		
867	CPD	NM_001300.3	3881	cgatatacagcagatgtgtgttg	185917	580038	see also 859 line		
868	CPD	NM_001300.3	4049	aagatgaatctcagatgacct	185927	580045	see also 859 line		
869	CSE1L	NM_001316.2	1177	tgtgtccttaactgaattttga	128369	530499	receptor, activity,		
870	CSE1L	NM_001316.2	1789	tctgtcgaacaacctctttcaaa	128388	530523	apoptosis		
871	CSE1L	NM_001316.2	2403	caactctctctgaactgttga	128402	530537	see also 869 line		
872	CNNK2B	NM_001320.5	428	atccaagacaaattttactctac	205578	596375	see also 872 line		
873	CNNK2B	NM_001320.5	942	tcaaaactgcacacactcttaag	205589	596383	kinase, related,		
874	CSTF2	NM_001325.1	591	tcttgcgtcgcagacaaatctat	50218	482223	signal transduction	protein kinase CK2, regulator	
875	CSTF2	NM_001325.1	722	tgtgtgtgagatgcgactgaatg	50224	482226	see also 874 line	RNA binding	
876	CSTF3	NM_001326.1	254	ggccaagaaactcaactatagaca	50236	670535	see also 874 line		
877	CSTF3	NM_001326.1	550	atcagattttgtgtgtgtatcac	50244	670545	see also 876 line		
878	CSTF3	NM_001326.1	629	acctctctcagatgtttatcaac	50246	670549	see also 876 line		
879	CSTF3	NM_001326.1	779	tgaactctgtgacaaagtatg	50254	670556	see also 876 line		
880	CSTF3	NM_001326.1	1177	atgaagaactgcgcactcaatg	50266	670565	see also 876 line		
881	CSTF3	NM_001326.1	1485	ctcctctcaatgcgcactcaatg	50282	670576	see also 876 line		
882	CSTF3	NM_001326.1	1497	cactcaacgggagaaataatc	50293	670577	see also 876 line		
883	CSTF3	NM_001326.1	2186	aagcgcacacagggatgcagatg	50301	670589	see also 876 line		

884	CTNND1	NM_001331.1	666	atcggtgcttcacacagatgc	278921	660488	-	structural molecule	-
885	CTNND1	NM_001331.1	1820	ctctgagctcttcgaattatct	278941	660526	see also 884 line	-	-
886	CTNND1	NM_001331.1	1916	tggaaagctcttcgaattatct	278945	660532	see also 884 line	-	-
887	DAB2	NM_001343.1	445	atgacatgagcttcgaattatgc	309080	534276	-	-	-
888	DAB2	NM_001343.1	538	atgacatgagcttcgaattatgc	309081	534291	see also 887 line	-	-
889	DAB2	NM_001343.1	847	ctctgagcttcgaattatgc	309091	534303	see also 887 line	-	-
890	DAB2	NM_001343.1	1468	ggcagagcttcgaattatgc	309099	534315	see also 887 line	diacylglycerol	-
891	DGKG	NM_001346.1	1562	accgtgtccacaaagtatcag	141743	547240	kinase-related	-	-
892	DGKG	NM_001346.1	1563	ccgtggtccacaaagtatcag	141744	547241	see also 891 line	kinase	-
893	DGKG	NM_001346.1	1627	atagagcttcacgaattatga	141745	547242	see also 891 line	-	-
894	DGKG	NM_001346.1	1629	ggagcttcacgaattatga	141746	547243	see also 891 line	-	-
895	DGKG	NM_001346.1	1634	ttcaccttcgaattatga	141748	547244	see also 891 line	-	-
896	DARS	NM_001349.1	275	tacgttcgaattatga	58927	482687	-	nucleic acid binding/Alzheimer disease(アルツハイマー病)	-
897	DARS	NM_001349.1	378	tgcagcagcagcttgaatt	58928	482689	see also 896 line	-	-
898	DARS	NM_001349.1	1276	ttggtctgaagcctttctaac	58955	482695	see also 896 line	-	-
899	DARS	NM_001349.1	1277	ttggtctgaagcctttctaac	58956	482696	see also 896 line	-	-
900	DARS	NM_001349.1	1280	ctgtgaagcctttctaac	58957	482697	see also 896 line	-	-
901	DDX3X	NM_001356.2	2492	aaccgaagacataaattaac	24899	457706	-	-	-
902	DDX3X	NM_001357.2	259	atgtcgaagcctttctaac	25023	458216	-	-	-
903	DDX3X	NM_001357.2	3014	tactaacatgacacattatga	25083	458315	see also 902 line	-	-
904	DDX3X	NM_001357.2	3020	cactaacacataaattatga	25090	458316	see also 902 line	-	-
905	DDX3X	NM_001357.2	3067	ttgtgttgcacacattatga	25091	458318	see also 902 line	-	-
906	DDX3X	NM_001357.2	3075	gtgttcacacattatga	25092	458319	see also 902 line	-	-
907	DDX3X	NM_001357.2	3075	taccacacattatga	25093	458320	see also 902 line	-	-
908	DDX3X	NM_001357.2	3076	aaccacattatga	25094	458321	see also 902 line	-	-
909	DDX3X	NM_001357.2	3077	ccacattatga	25095	458322	see also 902 line	-	-
910	DDX3X	NM_001357.2	3078	ccacattatga	25096	458330	see also 902 line	-	-
911	DDX3X	NM_001358.1	324	acccttctctgacacattatga	25109	458346	RNA helicase	-	-
912	DDX3X	NM_001358.1	523	ccacacattatga	25148	458447	see also 911 line	-	-
913	DDX3X	NM_001358.1	523	ccacacattatga	25149	458448	see also 911 line	-	-
914	DDX3X	NM_001358.1	533	tactctgacacattatga	25151	458449	see also 911 line	-	-
915	DDX3X	NM_001358.1	533	tactctgacacattatga	25152	458450	see also 911 line	-	-
916	DDX3X	NM_001358.1	1007	ccacattatga	25153	458451	see also 911 line	-	-
917	DDX3X	NM_001358.1	1010	ccacattatga	25154	458452	see also 911 line	-	-
918	DDX3X	NM_001358.1	1062	cagatttctgacacattatga	25155	458453	see also 911 line	-	-
919	DDX3X	NM_001358.1	1260	ggagatgaagcgtgacattatga	25156	458454	see also 911 line	-	-
920	DDX3X	NM_001358.1	1262	ggagatgaagcgtgacattatga	25157	458455	see also 911 line	-	-
921	DDX3X	NM_001358.1	1990	ccacattatga	25158	458456	see also 911 line	-	-
922	DDX3X	NM_001358.1	2201	tacacacacacattatga	25159	458457	see also 911 line	-	-
923	DEGR1	NM_001359.1	662	tgtgtgacacattatga	224269	613899	2, 4-dienoyl-CoA reductase	-	-
924	DHODH	NM_001361.1	255	ggcacaattatga	223970	612102	dhidronolate oxidase	-	-

925	DLG2	NM_001364.1	2519	ggcattcaatgaacttaattat	209272	860961	kinase related	guanylate kinase	-
926	DLG2	NM_001364.1	2518	aaccaaagcaagctattattga	209279	860971	see also 925 line	-	-
927	DLG4	NM_001385.1	2475	aacgaagatgctcaagttaaag	126176	643153	kinase related,	protein C-terminus	-
928	DLG4	NM_001385.1	2644	ctccgctctccgcagacttttg	126177	643157	signal transduction	binding	-
929	DLG4	NM_001385.1	2645	tcacpctctccgcagacttttg	126178	643158	see also 927 line	-	-
930	DNAH5	NM_001369.1	1152	ttccactctctccgcagactttg	79138	499970	-	-	-
931	DNAH5	NM_001369.1	3483	ttcaaacgctctccgcagactttg	79210	500028	see also 930 line	-	-
932	DNAH5	NM_001369.1	4837	aggtaacgctctccgcagactttg	79232	500055	see also 930 line	-	-
933	DNAH5	NM_001369.1	4887	aggtaacgctctccgcagactttg	79254	500056	see also 930 line	-	-
934	DNAH5	NM_001369.1	11541	ttccaaactcaaacgactctatcg	79254	500159	see also 930 line	-	-
935	DNAH5	NM_001369.1	11870	ggctcaattttggaactcttgc	79460	500173	see also 930 line	-	-
936	DNAH5	NM_001371.1	1897	ggctcaattttggaactcttgc	79502	500284	see also 930 line	-	-
937	DNAH8	NM_001371.1	1898	aggctctctctcgcgtatataac	79544	500285	see also 937 line	-	-
938	DNAH8	NM_001371.1	1898	aggctctctctcgcgtatataac	79545	500285	see also 937 line	-	-
939	DNAH8	NM_001371.1	12430	cttgcgaaggaagcgcgaataatt	80270	500562	see also 937 line	-	-
940	DNAH8	NM_001371.1	13149	aaactgtatagctctgtatacc	80288	500593	see also 937 line	-	-
941	DNAH8	NM_001371.1	13152	atgtatagctctgtatacc	80289	500594	see also 937 line	-	-
942	DNAH8	NM_001371.1	988	caagagacacacccaactatgac	25323	591101	apoptosis	deoxyribonuclease	-
943	DNAH8	NM_001376.2	5563	agccaaagcagattttacttga	80668	500704	-	-	-
944	DNAH8	NM_001376.2	7693	ggcaagctgctcagattttgaat	80703	500735	see also 943 line	-	-
945	DNAH8	NM_001376.2	10962	aggctctctcagattttgaat	80763	500808	see also 943 line	-	-
946	DNAH8	NM_001376.2	12270	aggctctctcagattttgaat	80768	500825	see also 943 line	-	-
947	DNAH8	NM_001376.1	189	ggctcaattttggaactcttgc	299594	668038	-	microtubule motor	-
948	DNAH8	NM_001376.1	1410	ttccactcaacgaggaagctatgc	299620	668071	see also 947 line	-	-
949	DNAH8	NM_001376.1	465	ggctctctcagattttgaat	25332	458459	transcription_regulat or	zinc binding, transferring	schizophrenia(精神分裂病)
950	DPAGT1	NM_001382.1	251	ggcattcccccacactgaattg	209558	598901	-	-	-
951	DPYSL2	NM_001386.3	310	caagagcgtgctgctctctgatac	203848	595572	signal transduction	glycosyl groups	-
952	DPYSL2	NM_001386.3	313	agccagctctctctctgatac	203849	595573	see also 951 line	dihydropyrimidines	-
953	DPYSL2	NM_001386.3	314	agcagctctctctctgatac	203850	595574	see also 951 line	-	-
954	DPYSL3	NM_001387.1	684	ggccagctctctctctgatac	203855	595501	signal transduction	-	-
955	DSCAM	NM_001386.2	509	tcacagagctctctctctgatac	318849	742747	-	-	-
956	DSCAM	NM_001386.2	509	agcctcgaattttttcttga	318850	742748	see also 955 line	-	-
957	DSCAM	NM_001386.2	1955	ggctctcaacgctctgataaac	318881	742763	see also 955 line	-	-
958	DSCAM	NM_001386.2	1956	tcctgtcaacgctctgataaac	318882	742764	see also 955 line	-	-
959	DSCAM	NM_001386.2	5465	ccagagctcagctctgatttga	318964	742811	see also 955 line	-	-
960	DYRK1A	NM_001396.2	740	tgcatllgaaagccactatgta	80325	500911	kinase related	-	-
961	DYRK1A	NM_001396.2	749	aaagcagctctctctgatac	80327	500912	see also 960 line	-	-
962	DYRK1A	NM_001396.2	861	agcagagctctctctgatac	80328	500917	see also 960 line	-	-
963	DYRK1A	NM_001396.2	899	tcctgtcagctctgataaac	80330	500918	see also 960 line	-	-
964	DYRK1A	NM_001396.2	906	gactcagagctctgataaac	80333	500919	see also 960 line	-	-

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987	EP300	NM_001429.1	1278	gcgcagcagctgcacagattttg	3237	526255	see also 985 line		
988	EP300	NM_001429.1	1739	agggcagcagcagcagattatg	3251	526284	see also 985 line		
999	EP300	NM_001429.1	2611	ttggcagcagcagcagcagcagc	3288	526279	see also 986 line	structural constituent of cytoskeleton	-
1000	EPB4112	NM_001431.1	1988	tggtgacntcagcgcacatttta	117079	522634	-		-
1001	EPB4112	NM_001431.1	2847	cagcagcagcagcagcagcagc	117091	522643	see also 1000 line		-
1002	ERN1	NM_001433.1	415	tcocccctgcgaattcagattg	28160	459255	kinase related	-	-
1003	ERN1	NM_001433.1	1833	tggtgacgtgcagcagcagcagc	28182	459271	see also 1002 line		-
1004	ERN1	NM_001433.1	2711	tggtgacgtgcagcagcagcagc	28190	459296	see also 1002 line		-
1005	ESR2	NM_001437.1	919	agggcttgagcgtcccttttaaa	3446	443538	receptor activity, transcription co-activator	breast cancer(乳癌), Alzheimer disease(アルツハイマー病)	-
1006	ESRRG	NM_001438.1	835	cagcagcaaaagccatcacaaag	3487	443585	translation	-	-
1007	ESRRG	NM_001438.1	1120	ttgtctctgcagcagcagcagc	3491	443588	see also 1006 line		-
1008	ESRRG	NM_001438.1	1122	gtctatgcagcagcagcagcagc	3492	443589	see also 1006 line		-
1009	EXTL3	NM_001440.1	2141	gcgcagcaagccgcctttctcgc	213486	601784	transferring, glycosyl groups	-	-
1010	GPC4	NM_001448.2	322	agctctcccaagcttcacacaa	246333	633648	receptor activity	-	-
1011	GPC4	NM_001448.2	1150	atccctctgcagcagcagcagc	246357	633674	see also 1010 line		-
1012	GPC4	NM_001448.2	1251	ctcccaacctgcagcagcagcagc	246360	633680	see also 1010 line		-
1013	GPC4	NM_001448.2	1356	tggtgacgtgcagcagcagcagc	246362	633683	see also 1010 line		-
1014	FOXO3A	NM_001455.1	2384	cacagctgaccccttgatgct	4174	444142	transcription regulat or, apoptosis	transcription factor - disulfide isomerase	-
1015	FM05	NM_001461.1	674	agggcgtctgctcttgatgatta	221405	608316	see also 1015 line		-
1016	FM05	NM_001461.1	674	agggcgtctgctcttgatgatta	221406	608318	see also 1015 line		-
1017	GABBR1	NM_001470.1	1315	atctctgtgagcagcagcagcagc	178893	629584	receptor activity, signal transduction	alcoholism(アルコール依存症)	-
1018	GABBR1	NM_001470.1	1319	tggtgagcagcagcagcagcagc	178894	629585	see also 1017 line		-
1019	GABBR1	NM_001470.1	1344	agccctgcagcagcagcagcagc	178897	629588	see also 1017 line		-
1020	GAS8	NM_001481.1	659	ggagcagcagcagcagcagcagc	280374	667234	-	glycine	-
1021	GATM	NM_001482.1	108	cgcgcagcagcagcagcagcagc	214929	604846	see also 1021 line	amino transferase	-
1022	GATM	NM_001482.1	657	cagctcaattcttcacagcagcagc	214952	604863	see also 1021 line		-
1023	GATM	NM_001482.1	873	ggagcagcagcagcagcagcagc	214954	604868	see also 1021 line		-
1024	GATM	NM_001482.1	1188	tgccatgagcagcagcagcagcagc	214962	604877	see also 1021 line		-
1025	GATM	NM_001482.1	1196	agcttcacatcttcacagcagcagc	214963	604879	see also 1021 line		-
1026	NR6A1	NM_001489.2	1100	gcgcagcagcagcagcagcagcagc	8711	447418	transcription regulat or, C-JUN	Proto-oncogene	-
1027	GCLC	NM_001498.1	1205	tgctatctctctttatgagcagc	231847	616941	see also 1027 line		-
1028	GCLC	NM_001498.1	1758	ctgcagcagcagcagcagcagcagc	231955	616958	see also 1027 line		-

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1029	GC1C	NM_001498.1	1784	agagacatctagagcaacata	231956	616959	see also 1027 line		
1030	GMDS	NM_001500.1	745	agccgcctagctagcaattta	233634	614190	—	GDP-mannose 4,	—
1031	GMDS	NM_001500.1	746	agccgcctagctagctagctatc	233635	614191	see also 1030 line	8-dehydratase	—
1032	GP-D1	NM_001503.2	2300	aggtgctagctagctagctatc	197357	589683	—	—	—
1033	GP-D1	NM_001503.2	2301	tgctctagctagctagctatc	197358	589684	see also 1032 line	—	—
1034	GRD2	NM_001510.1	82	cacatctggagcaattttgata	244680	696796	channel,	receptor activity,	—
1035	GRD2	NM_001510.1	682	atcgctctggagcaactcttaag	244692	696806	signal transduction	—	—
1036	GRD2	NM_001510.1	2128	atcgctctggagcaactcttaag	244743	696845	see also 1034 line	—	—
1037	GRD2	NM_001510.1	2626	cacatctagctagctatcaatag	244758	696856	see also 1034 line	—	—
1038	GRD2	NM_001510.1	2627	acactctagctagctatcaatag	244759	696857	see also 1034 line	—	—
1039	GRD2	NM_001510.1	2630	tccatagagctgctatcaatagct	244760	696858	see also 1034 line	—	—
1040	GRD2	NM_001510.1	2709	cactctggacattgacacttgc	244764	696861	see also 1034 line	—	—
1041	GRD2	NM_001510.1	2876	agcacacagctggcccttttag	244766	696863	see also 1034 line	—	—
1042	GTF2B	NM_001514.2	439	tatttctgcacaaataattta	275434	657925	transcription regulat	general RNA	—
1043	GTF2B	NM_001518.2	555	acactcttttttaataaccaga	4582	459810	polymerase II	transcription factor	—
1044	GTF21	NM_001518.2	1009	acactctggccctctaaataaga	4586	459820	see also 1043 line	—	—
1045	GTF3C2	NM_001521.1	46	acactctggccctctaaataaga	131596	721311	—	—	—
1046	GTF3C2	NM_001521.1	1936	ggagctgacacggagaaataaatc	131619	721337	see also 1045 line	—	—
1047	HDA3C	NM_001527.1	1037	caactcaagctagctaaatgct	4713	526350	transcription factor	—	—
1048	HDA3C	NM_001527.1	1184	atgagctgcaataataatgctac	4718	526362	see also 1047 line	—	—
1049	HDA3C	NM_001528.2	1458	cactctggccctggcttaaccac	182160	373490	trypan	—	—
1050	HIF1A	NM_001530.2	323	aagtcttgaagctcgaagaagaa	225	444481	transcription regulat	—	—
1051	HIF1A	NM_001530.2	328	ctgaagctcgaagaagaagaagct	226	444482	or,	—	—
1052	HIF1A	NM_001530.2	1098	ggccgctcaattttgataattta	253	444511	see also 1050 line	—	—
1053	HIF1A	NM_001530.2	1208	tgcacaaagagctggatgattgct	256	444516	see also 1050 line	—	—
1054	HIF1A	NM_001530.2	1240	ctcaaacactctcatatataaac	257	444518	see also 1050 line	—	—
1055	HIF1A	NM_001530.2	1789	cagatggagcactagacaaagt	279	444527	see also 1050 line	—	—
1056	ID4	NM_001546.2	555	gtgctctgagctgcatatgaagc	113122	690236	transcription regulat	transcription co-	—
1057	IFR01	NM_001550.1	589	actcttcttaactgagctatgga	319610	704459	or	repressor	—
1058	IFR01	NM_001550.1	720	aaactctgaacaaactctaaaga	319613	704463	see also 1057 line	—	—
1059	IGFBP7	NM_001553.1	488	tgcacaaagctctctctaatg	124925	528765	antigen binding	—	—
1060	IGFBP7	NM_001553.1	719	atctctgattctctctctaaaga	124927	528761	see also 1059 line	—	—
1061	IGFBP7	NM_001553.1	720	tctctgattctctctctaaaga	124928	528762	see also 1059 line	—	—
1062	IGSF1	NM_001555.1	1928	tgcacaaagagctgatttctct	319101	756876	—	—	—
1063	IGSF1	NM_001555.1	3024	ccactggagcagctgatttctct	319122	756897	see also 1062 line	—	—
1064	IGSF1	NM_001555.1	3769	tccagctcagcagctgatttctct	319140	756923	see also 1062 line	—	—
1065	INPP4A	NM_001566.1	462	tactctatcagctagctgaagc	317750	742140	signal transduction	—	—

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1066	INPP4A	NM_001566.1	1271	aagcagataaaagatgaattt	317772	742152	see also 1065 line	ATP-binding cassette (ABC) transporter	-
1067	ABCA2	NM_001606.2	1845	ggcgttgatcactatgtcc	83768	493694	-	-	-
1068	ABCA2	NM_001606.2	6094	cccttgatgagcagcttcca	83792	493732	see also 1067 line	-	-
1069	ACRV1	NM_001612.4	908	ttccacagcagctgtaaaaga	320627	684456	-	-	-
1070	ACVR2	NM_001616.2	475	ctgtgaagcagcattgtatg	71703	493299	receptor activity, signal transduction	transforming growth factor-beta receptor	-
1071	ACVR2	NM_001616.2	659	atggctacactctgactctgt	71714	493307	kinase related	-	-
1072	ACVR2	NM_001616.2	1030	ggctcatatgcagaaccattgt	71726	493314	see also 1070 line	-	-
1073	ACVR2	NM_001616.2	1051	ggctcatatgcagcattcttttc	71727	493316	see also 1070 line	-	-
1074	ACVR2	NM_001616.2	1448	caggaagtgtgtctctaaaaa	71735	493324	see also 1070 line	-	-
1075	ACVR2	NM_001616.2	1853	ctctcaaaagactagtctatga	71728	493331	see also 1070 line	-	-
							transcription regulat	-	-
							or,	-	-
							receptor activity,	-	-
1076	AHR	NM_001821.2	693	accgcgttcagaaaacgtaaaag	772	454610	apoptosis,	translation regulator	-
1077	AHR	NM_001821.2	884	agctctttttgtttgtctbaaa	786	454620	cell cycle,	-	-
							see also 1076 line	-	-
1078	AKT2	NM_001628.2	244	agcgtgtgataatcaagaacc	71965	493659	kinase related	protein serine/threonine kinase	breast cancer (乳癌), ovarian cancer (卵巣性腫瘍), pancreatic cancer (膵臓癌), malignant thymoma (悪性胸腺腫)
1079	AKT2	NM_001628.2	406	cagacaccacacactcttctata	71969	493681	see also 1078 line	-	-
1080	ALCAM	NM_001627.1	341	cagaataatcaactctgtctctc	170930	682253	signal transduction	-	-
1081	ALCAM	NM_001627.1	451	ggctgaagcagcactctctaaccc	170934	682257	see also 1080 line	-	-
1082	AMPB	NM_001633.2	554	cacaatctccaaatgaagcaataac	180342	855700	-	transporter	Mediterranean fever (地中海熱), periodic disease (周期性発熱)
1083	AOAH	NM_001637.1	1058	gactctacgttggctctcttttcca	198818	595112	-	lipoprotein lipase	-
1084	APEX1	NM_001641.2	1162	atgtttgtggcgccttgatctac	21395	591077	or	-	-
1085	APEX1	NM_001641.2	1165	tgtgttgccgccttgatcttctt	21396	591078	see also 1084 line	-	-
1086	APEX1	NM_001641.2	1169	tgtgttccttgatctacttttgt	21398	591079	see also 1084 line	-	-
1087	APIP2	NM_001642.1	1177	ctgccaacactgatgttgatgt	21427	454819	-	serine protease inhibitor	-
1088	APIP2	NM_001642.1	1179	gcccaactgatgttgatgtgt	21428	454820	see also 1087 line	-	-
1089	APIP2	NM_001642.1	1280	accgaatgaacagtgatgaagaag	21430	454822	see also 1087 line	-	-
1090	APIP2	NM_001642.1	2048	tggatgttaagaagaatgttttcc	21444	454837	see also 1087 line	-	-
1091	APOD	NM_001647.1	193	aagatgttgaatgaatgaaga	173246	570047	-	transporter	-
1092	APYL	NM_001649.2	3883	ascggggctatgacacacacacc	282481	773670	channel	amiloride-sensitive sodium channel	melanoma (メラノーマ)
1093	AQP4	NM_001550.3	936	tggatggagtgatgttgatgac	263840	647510	-	-	-
1094	ARAF1	NM_001654.1	488	ctgcccattgcacatttttgacg	72297	494006	kinase related	receptor signaling protein	-

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1095	AFR6I	NM_001656.2	695	ccatccgacgacacatttata	108259	520579	signal transduction	-	-
1096	AFR6I	NM_001663.2	730	gcctctccgacgacattata	108231	518624	signal transduction	protein transporter	Alzheimer disease(アルツハイマー病)
1097	AFR6I	NM_001663.2	732	ccctctccgacgacattata	108232	518625	see also 1096 line	-	-
1098	AFR6I	NM_001663.2	819	agctctccgacgacattata	108234	518626	see also 1096 line	-	-
1099	AFR6I	NM_001663.2	1005	atgctctccgacgacattata	108237	518630	see also 1096 line	-	-
1100	AFR6I	NM_001663.2	1008	agctctccgacgacattata	108238	518631	see also 1096 line	-	-
1101	AFR6I	NM_001663.2	1015	ccctctccgacgacattata	108239	518632	see also 1096 line	-	-
1102	ATP2A2	NM_001681.2	380	tcctctccgacgacattata	72172	494421	-	-	Darier-White disease(タリエー病)
1103	ATP2A2	NM_001681.2	859	tgctccgacgacgacgacgac	72176	494421	see also 1102 line	plasma membrane cation-transporting ATPase	-
1104	ATP2B2	NM_001683.1	3920	ctctgaacctccatccatccat	72834	494528	-	-	-
1105	ATP2B2	NM_001683.1	3953	ctctgaacctccatccatccat	72836	494529	see also 1104 line	-	-
1106	ATP5J	NM_001695.3	756	ctctgaacctccatccatccat	266178	635317	-	hydrogen-transporting two-sector ATPase	-
1107	ATP6V1A	NM_001690.2	351	gctctgaacctccatccatccat	73168	494798	-	hydrogen-transporting two-sector ATPase	-
1108	ATP6V1A	NM_001690.2	484	aactctgaacctccatccatccat	73173	494805	see also 1107 line	-	-
1109	ATP6V1A	NM_001690.2	485	aactctgaacctccatccatccat	73174	494806	see also 1107 line	hydrogen-transporting two-sector ATPase	-
1110	ATP6V1B2	NM_001693.2	994	tgctctgaacctccatccatccat	73261	494859	-	hydrogen-transporting two-sector ATPase	-
1111	ATP6V1C1	NM_001695.2	1273	agctctgaacctccatccatccat	73224	494909	gpcr, receptor activity, signal transduction	hydrogen-transporting two-sector ATPase	-
1112	AXL	NM_001699.3	2418	ctctgaacctccatccatccat	73964	495684	receptor activity, kinase related	-	thyroid cancer(甲状腺癌), chronic myeloid leukemia(慢性骨髄性白血病), rheumatoid arthritis(関節リウマチ), colorectal cancer(大腸癌), leukemial(白血病), colorectal cancers(結腸癌)
1113	AXL	NM_001699.3	2420	gctctgaacctccatccatccat	73965	495685	see also 1112 line	-	-
1114	BAI1	NM_001702.1	2959	ctctgaacctccatccatccat	129221	532473	gpcr, receptor activity, signal transduction	protein binding	colorectal cancer(大腸癌), colorectal cancers(結腸直腸癌)
1115	BAI2	NM_001703.1	1920	gctctgaacctccatccatccat	242213	629997	-	G-protein coupled receptor	-
1116	BAI3	NM_001704.1	41	ctctgaacctccatccatccat	242235	630026	gpcr, receptor activity, signal transduction	-	-
1117	BAI3	NM_001704.1	44	tcctgaacctccatccatccat	242236	630027	see also 1116 line	-	-
1118	BAI3	NM_001704.1	218	agctctgaacctccatccatccat	242247	630033	see also 1116 line	-	-
1119	BAI3	NM_001704.1	288	gctctgaacctccatccatccat	242250	630037	see also 1116 line	-	-
1120	BAI3	NM_001704.1	290	tgctgaacctccatccatccat	242251	630038	see also 1116 line	-	-

1121	BAI3	NM_001704.1	967	cagctgagacgaacttgct	242288	630058	see also 1118 line		
1122	BAI3	NM_001704.1	970	gtctgaacacgaactgctgc	242289	630059	see also 1118 line		
1123	BAI3	NM_001704.1	971	ttctgaacacgaactgctgctc	242290	630060	see also 1118 line		
1124	BAI3	NM_001704.1	1749	cgacacactgcagctcaacta	242284	630071	see also 1118 line		
1125	BAI3	NM_001704.1	1751	gaacactgcagctcaacta	242285	630072	see also 1118 line		
1126	BAI3	NM_001704.1	2799	ctctcaactcctccatacctg	242319	630111	see also 1116 line		
1127	BAI3	NM_001704.1	3393	gacagataaagctccatattg	242330	630123	see also 1116 line		
1128	BAI3	NM_001704.1	3862	ttctgagacacgtgctacactg	242352	630145	see also 1116 line		
1129	BAI3	NM_001704.1	4069	aacctcgaactcaattgaact	242358	630155	see also 1116 line		
1130	BAI3	NM_001704.1	4172	ctcgacacacgtggaagatttc	242360	630164	see also 1116 line		
1131	BAI3	NM_001704.1	4241	ctgtgctcaacgaactcagctg	242361	630168	see also 1116 line		
1132	BC16	NM_001706.2	437	gtctgacacgctgagcagtttga	1478	456293	transcription_regulat	non-hodgkin lymphoma(非ホジキンリンパ腫)	
1133	BC16	NM_001706.2	439	gtctgacacgctgagcagttgagc	1479	456294	see also 1132 line	leukemia(白血病)	
1134	BDNF	NM_001709.3	295	tcctcttctcctactctgattt	168949	532682	-	Parkinson disease(パーキンソン病)	
1135	BDNF	NM_001709.3	301	tcctctctactctgattctaatc	168951	532683	see also 1134 line	schizophrenia(精神分裂病)	
1136	BDNF	NM_001709.3	965	ttgctgtcattctaatgaagtag	168970	532696	see also 1134 line		
1137	BDNF	NM_001709.3	966	agcttcagcatctaatgaagtag	168971	532697	see also 1134 line		
1138	BDNF	NM_001709.3	970	agctgcttctaatgaagtagaact	168972	532698	see also 1134 line	extracellular matrix	
1139	BGN	NM_001711.3	709	cagcagctctcccgacactgaact	287619	694898	-	Alzheimer disease(アルツハイマー病)	
1140	BGN	NM_001711.3	711	tcagcagctctcccgacactgaactc	287620	694899	see also 1139 line		
1141	BICD1	NM_001714.3	545	agagataacacgagatataaag	277310	658575	-		
1142	BICD1	NM_001714.1	652	cagacacagcagctgctgctgc	277314	658577	see also 1141 line		
1143	BICD1	NM_001714.1	1554	cagctgactgcacagcaaatcaaca	277326	658599	see also 1141 line		
1144	BNC	NM_001717.2	1708	cagcttgctctcacaactgaaga	1581	456541	transcription_regulat	transcription factor	
							or	cell cycle,	
1145	BPAG1	NM_001723.3	545	ttgctcttaagcaactgcttct	115349	522000	signal_transduction	epidermolysis bullosa(表皮水疱症)	
1146	BPAG1	NM_001723.3	547	accttaagcaactgcttcttc	115350	522001	see also 1145 line		
1147	BPAG1	NM_001723.3	1983	cagaatttgatcaacagctcaga	115384	522042	see also 1145 line		
							receptor_activity,		
							gpr,		
1148	BRS3	NM_001721.1	170	ctcaactcaatcagacttaattt	178825	623729	signal_transduction	bombesin receptor	Alzheimer disease(アルツハイマー病)
							kinase_related,		
							signal_transduction		
1149	G5	NM_001735.2	2531	tacgagagacagactcacttg	167165	664212	gpr	endopeptidase	lupus erythematosus(円板状エリテマトーデス)
1150	G5	NM_001735.2	2532	acagagagacagctcacttg	167166	664213	see also 1149 line	inhibitor	Alzheimer disease(アルツハイマー病)
1151	G5	NM_001735.2	2534	acagagacagactcacttg	167167	664214	see also 1149 line		
1152	CALB2	NM_001740.2	541	aacctactctcagcttgtaact	138941	545153	-		

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1153	CALCR	NM_001742.1	411	atcgaacctggtccaaactatct	242001	630375	receptor activity, agonist signal transduction	calcitonin receptor calmodulin-dependent protein kinase I	lower lumbar bone mineral density (骨ミネラル密度低下)
1154	CAMK4	NM_001744.3	808	tggattttgacccatctctatgag	75082	497054	kinase, related	calcium ion binding	
1155	CAMK4	NM_001744.3	886	ctcccctctggatgagatgagat	75060	497058	signal transduction	calcium ion binding	
1156	CANX	NM_001746.2	551	tgtctcagttgagttggtatctt	137406	542549	see also 1154 line	chaperone	
1157	CAPN2	NM_001748.3	2145	tgtctggaacctgctcaaaagata	139059	542585	—	calpain	
1158	CAV1	NM_001753.3	460	atgcctgtgtcaagttgacttt	289813	533197	—	sterol regulatory element binding protein-1a	prostate cancer (前立腺癌)
1159	ENTPD1	NM_001776.2	464	aagctctggaatctcaaaattt	165384	563044	—	magnesium binding	
1160	CDH2	NM_001792.2	988	atcaattgctgaagtaagta	139830	545603	—	calcium ion binding	
1161	CDH2	NM_001792.2	1227	aagtcacaagatactcgttaata	139833	545609	see also 1160 line	—	
1162	CDH2	NM_001792.2	1229	gtgcacaactatactgcttaatt	139834	545609	see also 1160 line	—	
1163	CDH2	NM_001792.2	1571	aagattgtttctctctctctac	139847	545623	see also 1160 line	—	
1164	CDH2	NM_001792.2	2171	cagctcaattgattttgtctca	139874	545644	see also 1160 line	—	
1165	CDH4	NM_001794.2	2136	gtcaaggtgtcccaactatga	140173	545755	—	calcium ion binding	
1166	CDH8	NM_001796.2	692	tggatctctctctgaattatt	140334	545946	—	calcium ion binding	
1167	CDH8	NM_001796.2	1496	ctcgtaccctctctatctctcc	140360	545975	see also 1166 line	—	
1168	CDH8	NM_001796.2	2338	ccctgtgaaggtattataacacaa	140383	545986	see also 1166 line	—	
1169	CDH8	NM_001796.2	2403	tgtgtgtgtgtgtgaagtaattta	140385	545989	see also 1166 line	—	
1170	CDH8	NM_001796.2	2405	gtctctctctctgtgaattttta	140386	546000	see also 1166 line	—	
1171	CDH8	NM_001796.2	2550	atcagctctctctctgaagttttg	140387	546006	see also 1166 line	—	
1172	CDH8	NM_001796.2	2587	tggatctccctctctgaagacct	140388	546007	see also 1166 line	—	
1173	CDH11	NM_001797.2	2021	cagctcaacctctctgaatcttc	139418	545524	—	—	
1174	CDH11	NM_001797.2	2751	cagacgtgtgtgacctctgttaa	139435	545536	see also 1173 line	—	
1175	CDK2	NM_001798.2	1003	aagatgacaggaagctttatctg	76141	497761	kinase, related	—	
1176	CDK2	NM_001798.2	1013	ggactttatctgcaaatctcttc	76142	497762	cell cycle	—	
1177	CHN1	NM_001822.2	1658	gactctcttatacaaaacgaaga	172197	569581	see also 1175 line	diacylglycerol binding	
1178	CKB	NM_001823.3	271	cggtccaccctctctcatgacc	209433	598786	—	creatine kinase	
1179	CKM1	NM_001824.2	563	cagctgcagctgcaggttcaaaag	209436	598793	kinase, related	creatine kinase	
1180	CKM12	NM_001825.1	803	acctgtctgcagctctcaacaa	209455	813033	kinase, related	creatine kinase	
1181	CKM12	NM_001825.1	1176	acctgtctgcagctgtgagttcc	209467	813044	see also 1180 line	—	
1182	GLN3	NM_001825.1	1305	gtgtcatcagattttgtattttag	263284	646631	—	voltage-gated chloride channel	
1183	GLN3	NM_001825.1	2140	atccacacacattctgtattcttt	263302	646632	see also 1182 line	—	
1184	GLN3	NM_001825.1	2680	ggacctctcttgagattatbaaa	263319	646663	see also 1182 line	—	
1185	GLN3	NM_001825.1	2919	aaagacacccctctctctaat	263322	646664	see also 1182 line	—	
1186	GLN3	NM_001825.1	2920	acagagacccctctctctaatg	263323	646665	see also 1182 line	—	
1187	GLN3	NM_001825.1	2923	aagaccctctctctctaatgctt	263324	646666	see also 1182 line	—	

1215	GSNK2A2	NM_001896.2	619	acctcacatgaatgctatgctatt	77753	459032	see also 1210 line	structural molecule	-
1216	CTNNA1	NM_001903.1	436	gcgcagatgctcaaatctctg	290172	604000	-	-	-
1217	CTNNA1	NM_001903.1	1065	atctgcagctcaagaagaagt	290183	604023	see also 1216 line	carbon-nitrogen ligase, with glutamine as amido-N-donor	-
1218	CTPS	NM_001905.1	488	tggacactcaagctgtctgctatt	232084	616998	-	-	-
1219	CTPS	NM_001905.1	492	acctcaagctgtctattatgctc	232085	616999	see also 1218 line	-	-
1220	CTPS	NM_001905.1	1174	gtctgtgtccgcagtgattgctg	232090	617012	see also 1218 line	-	-
1221	DAO	NM_001917.3	1049	caacagagctatcaccaactatg	225944	499332	-	electron transporter	Alzheimer disease(アルツハイマー病)、 schizophrenia(精神分裂分装病)、 melanoma(メラノーマ)
1222	DOT	NM_001922.2	973	tgtctctatctattctctgttg	162530	613861	-	oxidoreductase damaged DNA binding	xeroderma pigmentosum(色素性乾皮症)
1223	DOB1	NM_001923.2	2764	tgcacagctgtcgctctatctagt	16115	482784	-	-	-
1224	DOB1	NM_001923.2	3102	tcacactgcgcagctgtctcaat	16121	482784	see also 1223 line	-	-
1225	DOB1	NM_001923.2	3104	caacttgagcgtgtgtctcaatg	16122	482795	see also 1223 line	-	-
1226	DOB1	NM_001923.2	3510	aggcgactcaactgagatccatg	16132	482805	see also 1223 line	structural constituent of ribosome	-
1227	GADD45A	NM_001924.2	705	atctcgtcttaagctcaactatt	285463	658316	kinase related cell cycle,	-	-
1228	GADD45A	NM_001924.2	706	tcctcgtcttaagctcaactatt	285464	658317	see also 1227 line	-	-
1229	DES	NM_001927.2	778	agagagctcgtctctcaagaag	287095	684782	-	structural constituent of cytoskeleton	distal myopathy with cardiomyopathy(末梢ミオパシー) myopathy(ミオパシー), cardiomyopathy(ア ルコール性心筋症)
1230	DES	NM_001927.2	780	gagatcgtcgtctctcaagaag	287098	684783	see also 1229 line	-	-
1231	DGUOK	NM_001929.2	280	catpcaagctgtgtctctcactctc	78242	499567	kinase related	-	mitochondrial DNA depletion syndrome(ミトコン ドリアDNA欠乏症候群)
1232	DGUOK	NM_001929.2	281	agcacaagctgtgtctctcactctc	78243	499568	see also 1231 line	-	-
1233	DLAT	NM_001931.2	539	gagatgattatggcgcctcttaaaa	78425	499579	-	protein binding	primary biliary cirrhosis(原発性胆汁性肝硬変)
1234	DP4	NM_001935.2	892	ctgagatcaactgaagctgaagctc	183391	577029	-	prolyl	-
1235	DP4	NM_001935.2	2080	cccgctgagatgactctgaactca	183435	577241	see also 1234 line	transcription co- repressor	-
1236	DR1	NM_001938.1	855	aggccgcgtctctgttggaagacc	25595	458688	or	-	-
1237	DR1	NM_001938.1	856	ggccagctctctgttggaagacc	25596	458689	see also 1236 line	-	-
1238	DRPLA	NM_001940.2	3429	gcctcgtgtccacctctctctgta	130909	612769	-	protein binding	dentatorubral-pallidum atrophy(室頂核回縮 萎縮症), myoclonic epilepsy(ミオクロームスエ ン)
1239	DSG3	NM_001944.1	1434	acacagagatctactctctagt	142479	547648	transcription regulat or	calcium ion binding	-
1240	E2F5	NM_001951.2	1004	gctcaaacacttaatttagatga	2944	443165	or cell cycle	translation regulator	-
1241	EFNA5	NM_001962.1	723	agaagaagctcgtctcaagctca	319566	684374	-	-	-
1242	EFNA5	NM_001962.1	916	agcgcctcttttgatctcact	319574	684376	see also 1241 line	-	-
1243	EFNA5	NM_001962.1	941	tctctcgcagcagctcttgaca	319575	684377	see also 1241 line	-	-
1244	EFNA5	NM_001962.1	947	tggcgatgctcttgatctatg	319578	684379	see also 1241 line	-	-

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1245	E4A2	NM_001987.2	1129	gagctatcaactgtctacga	25802	458072	translation	initiation factor	-
1246	E4A2	NM_001987.2	1130	gagctttctacatctatcagt	25803	459073	see also 1245 line	-	-
1247	EF42	NM_001989.3	543	caagcttccgaacatcctctc	56794	476734	-	-	-
1248	EF5	NM_001989.3	544	atccttccgaacatcctctc	56795	476735	see also 1247 line	-	-
1249	EF5	NM_001989.3	612	tgagctcaagcagctatagcca	56798	476736	see also 1247 line	-	-
1250	EF5	NM_001989.3	643	gacgttcaagcagctatagcca	56799	476737	see also 1247 line	-	-
1251	EF5	NM_001989.3	668	ctccagctatccaccacatatt	56800	476738	see also 1247 line	-	-
1252	EF5	NM_001989.3	669	tcacagctatccaccacatatt	56801	476739	see also 1247 line	-	-
1253	EF5	NM_001989.3	710	caagaccctctgttgcttaag	56802	476742	see also 1247 line	-	-
1254	EF5	NM_001989.3	753	tgagctctcagctgagctaacg	56803	476763	see also 1247 line	-	-
1255	EF5	NM_001989.3	756	atctctctgagctgagctaacg	56804	476764	see also 1247 line	-	-
1256	EF5	NM_001989.3	765	ggcgaataagcttgaagcagctgt	56805	476765	see also 1247 line	-	-
1257	EMR1	NM_001974.3	2147	caagctctcgacacatcaagatgc	143129	548064	gpcr, signal transduction	calcium ion binding	-
1258	ENO2	NM_001975.2	1014	cactgctctctccgctatcacaa	165351	563022	-	phosphorylase	-
1259	ENPEP	NM_001977.2	2117	tttgattttatctcgtatcaatt	156884	557583	-	zinc binding	-
1260	ENPEP	NM_001977.2	2118	tgattttatctcgtatcaatt	156885	557584	see also 1259 line	-	-
1261	ENPEP	NM_001977.2	2344	acgttcaactctacacatgcttga	156893	557596	see also 1259 line	-	-
1262	ENPEP	NM_001977.2	2350	atcttcaactctacacatgcttga	156894	557597	see also 1259 line	-	-
1263	EPS15	NM_001981.1	548	atcagctgttgcctacatcgaagt	143200	548139	signal transduction	-	-
1264	EPS15	NM_001981.1	652	ttgcagctgttgcctacatcgaagt	143203	548143	calcium ion binding	leukemia (白血病)	-
1265	EPS15	NM_001981.1	654	gcagctgttgcctacatcgaagt	143204	548144	see also 1263 line	-	-
1266	EPS15	NM_001981.1	1193	aagcagctgttgcctacatcgaagt	143219	548161	see also 1263 line	-	-
1267	ETV6	NM_001987.2	1071	ttcttgcagcgcggtacgaaact	3835	443744	transcription_regulat	leukemia (白血病), infantile fibrosarcoma (骨肉瘤)	-
1268	ETV6	NM_001987.2	1073	ctgcagcgcggtacgaaactc	3836	443745	or transcription_regulat	-	-
1269	ETV6	NM_001987.2	1077	caagcgcggtacgaaactcttc	3837	443746	see also 1267 line	-	-
1270	ETV6	NM_001987.2	1217	ttgcctcactctacaaactaacg	3839	443751	see also 1267 line	-	-
1271	ETV6	NM_001987.2	1218	gtctcctcactctacaaactaacg	3840	443752	see also 1267 line	-	-
1272	ETV6	NM_001987.2	1222	cactctacaaactcaaacattat	3841	443753	see also 1267 line	-	-
1273	EYA3	NM_001990.2	340	tacatctcctcgtctcatcaatga	205028	595800	phosphatase, transcription_regulat	-	-
1274	EYA3	NM_001990.2	343	atctcctcctcgtctcatcaatga	205029	595801	or transcription_regulat	-	-
1275	EYA3	NM_001990.2	344	tcctcctcctcgtctcatcaatga	205030	595802	see also 1273 line	-	-
1276	EYA3	NM_001990.2	735	cagactctcaaacacagatctatc	205042	595805	see also 1273 line	-	-
1277	EYA3	NM_001990.2	820	gtctcagcgtcagctacacagctga	205043	595809	see also 1273 line	-	-
1278	EZH1	NM_001991.2	406	atgcagcagcttttgcgaattatt	18532	459383	gpcr, transcription_regulat	-	-
1279	FBLN1	NM_001996.2	970	tcgagttatctatcgtcagatgac	144149	549312	chromatin binding	-	-

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1315	FNIA	NM_002027.1	213	accgaatctgacgatagatc	216852	605143	signal transduction	protein geranylgeranyltrans- ferase	-
1316	FN1	NM_002037.3	1717	taactatgacgactgaatgatat	53994	502856	kinase related	-	-
1317	GABP2	NM_002041.2	615	atgaatattatgaagagaata	4348	668921	transcription regulat	-	-
1318	GABP2	NM_002041.2	627	caagatattatcgatgctgtg	4347	668922	see also 1317 line	-	-
1319	GAL2	NM_002044.2	523	agagaaattcttgcagaatattg	53393	502494	kinase related	-	-
1320	GARS	NM_002047.1	1118	tgcgtctctttttgacacatac	84037	805186	glycine-tRNA	-	-
1321	GARS	NM_002047.1	1120	cgagatctttttggaacatat	84038	805197	see also 1320 line	-	-
1322	GATA1	NM_002049.2	317	tacagcagccactccagctattccc	4411	444323	transcription regulat	translation regulator	F-cell production (F細胞産生, hereditary persistence of fetal hemoglobin (遺伝性高胎児 マクロビリ血症))
1323	GATA1	NM_002049.2	319	cagacactccacagctctttccagg	4412	444324	see also 1322 line	-	-
1324	GATA3	NM_002051.1	1204	caagcccttgactatgaagaagg	4427	444353	-	translation	-
1325	GATA4	NM_002052.2	1118	ccgacaccaccaatctcgtatgtt	4430	696889	transcription regulat	translation regulator	-
1326	GATA4	NM_002052.2	1122	caccaccaatctcgtatgtttga	4431	696891	see also 1325 line	-	-
1327	GATA4	NM_002052.2	1124	caccaactcgtatgttttgacg	4432	696892	see also 1325 line	-	-
1328	GCG	NM_002054.2	392	atgctgaagacacttaccacgt	169830	566635	signal transduction	peptide hormone	-
1329	GPPT1	NM_002056.1	442	gcacccccagcgtcttaccatg	174605	568492	-	sugar binding	-
1330	GPPT1	NM_002056.1	444	gcacccccagcgtcttaccatg	174606	568493	see also 1329 line	-	-
1331	GPPT1	NM_002056.1	447	caccacacgtcttaccatgaaata	174608	568494	see also 1329 line	-	-
1332	GPPT1	NM_002056.1	447	caccacacgtcttaccatgaaata	174609	568495	see also 1329 line	-	-
1333	GPPT1	NM_002056.1	448	ccacagcgtcttaccatgaaataat	174618	568499	see also 1329 line	-	-
1334	GPPT1	NM_002056.1	1351	caagctttctgataagctgttgc	174635	568519	see also 1329 line	-	-
1335	GNAL15	NM_002068.1	572	gcacgagccctctaaagtgacc	109115	519449	gpr, signal transduction	signal transducer	-
1336	GNAL	NM_002071.1	533	tgttgtagcaatgagtgactata	109187	639017	gpr	-	schizophrenia (精神分裂病)
1337	GNAL	NM_002071.1	619	ggccctctatcacttgacttgata	109190	639021	see also 1336 line	-	-
1338	GNAZ	NM_002073.1	990	cgccacccagcacatgaacatcc	109285	519585	gpr, signal transduction	receptor signaling protein	-
1339	GNB3	NM_002075.2	749	ggggggttgacacacatgtttcc	192288	566103	gpr, signal transduction	atherosclerosis (動脈硬化症), coronary artery disease (冠動脈疾患)	-
1340	GNS	NM_002076.1	688	atgagctactctgcagatgtttt	200514	562176	-	-	-
1341	GOLGA1	NM_002077.1	565	tgcgtgaacagctctgcgaacttgc	321565	666725	-	-	-
1342	GOLGA1	NM_002077.1	576	tcctgaactctcagaagaatgataa	321566	666726	see also 1341 line	-	-
1343	GOLGA1	NM_002077.1	637	tccatctgcaaaatttccagcagc	321567	666731	see also 1341 line	-	-
1344	GOLGA4	NM_002078.2	1328	tctctgactcagaagacttaatt	305552	666788	-	-	-
1345	GOLGA4	NM_002078.2	1329	tcctgaagaagaagacttaattg	305553	666789	see also 1344 line	-	-

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1346	GOT1	NM_002079.1	799	aagaacttcaggctctacaatga	218012	605957	aspartate aminotransferase	-
1347	GPRK6	NM_002082.1	83	agcgaacacgcgtctctccaaagg	84283	503163	gpor, kinase, related, signal transduction	-
1348	GRB2	NM_002086.2	358	atcgagacgctccatccaaatgga	252679	535704	SH3/SH2 adaptor protein	-
1349	GRB2	NM_002086.2	363	agccatccatccatcatgctctca	252681	535705	see also 1348 line	-
1350	GRB2	NM_002086.2	367	atccgcaaatatgctctcaaaagc	252682	535706	see also 1348 line	-
1351	GRB2	NM_002086.2	963	cggcatcttcccccgaattatg	252691	535724	see also 1348 line	-
1352	GRB2	NM_002086.2	964	ggcatcttcccccgaattatgt	252692	535725	see also 1348 line	-
1353	GRK5	NM_002088.3	345	tcccatcgatccatctctctg	244594	632447	receptor, activity, potassium channel	-
1354	GRK5	NM_002088.3	734	gggaatgaactcagcttttaca	244595	632451	channel	-
1355	GRK5	NM_002088.3	743	ctcagctgtttacagctacatcc	244596	632453	see also 1353 line	-
1356	GRSF1	NM_002092.1	1125	aagccaatgcgccaaagacattata	47970	484473	mRNA binding	-
1357	GSK3B	NM_002093.2	1479	ggagacgctggagagacaaat	84399	503248	kinase related, signal transduction	-
1358	GTF2E2	NM_002095.3	956	ctzaacacacagagattcttc	275509	657965	protein kinase CK2 general RNA polymerase II transcription factor	-
1359	HAL	NM_002108.2	1820	aggaacactccatgctgaatccc	232329	617276	histidine ammonia-lyase	-
1360	HCK	NM_002110.2	999	ctgtagtgcacccatcacacagc	84739	503424	protein tyrosine kinase	-
1361	HDC	NM_002112.1	1201	cgctctctcggggtagagactct	233937	618212	histidine decarboxylase	-
1362	HIVEP1	NM_002114.1	941	aactgagcaactctgcacaaag	28333	480093	transcription, regulat	-
1363	HIVEP1	NM_002114.1	5567	cccacgaactatgttgacatt	28439	460194	or DNA binding	-
1364	HIVEP1	NM_002114.1	5568	cccagcaaatgattggacattg	28440	460195	see also 1362 line	-
1365	HLF	NM_002126.3	700	ttccctatcacggagatctcttc	19948	480242	transcription, regulat	-
1366	HLF	NM_002126.3	939	tgcgcagcaaacgcgaatcaccc	19950	480245	or double-stranded DNA binding	-
1367	HMGCS1	NM_002130.3	895	ttgctctcatgctcttcttca	216522	603758	see also 1365 line	-
1368	HNRPD	NM_002138.2	658	gactcgaactctgagttgatctc	28567	480315	transcription, regulat	-
1369	HNRPD	NM_002138.2	667	ctgaattgtgattctatcacagg	28569	480316	or see also 1368 line	-
1370	HNRPD	NM_002138.2	726	atcgaggagtttagtagaaggcca	28571	480317	see also 1368 line	-
1371	HOXB5	NM_002147.2	121	gcgcgaactatcatctctcaat	5121	444755	transcription, regulat	-
1372	HOXB5	NM_002147.2	122	ccgagcttcgaattctctcaatt	5122	444756	transcription factor	-
1373	HOXB5	NM_002147.2	123	cggagcttcgaattctctcaatta	5123	444757	see also 1371 line	-

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1374	HOXB5	NM_002147.2	124	cgccatcagctcaactt	5124	444758	see also 1371 line		
1375	HOXB5	NM_002147.2	199	cgccctctccagctcaactac	5126	444759	see also 1371 line		
1376	HOXB5	NM_002147.2	203	ctcttgatgctcaactcaatg	5128	444760	see also 1371 line		
1377	HOXB5	NM_002147.2	453	agccgcattctccgaataaga	5129	444761	see also 1371 line		
1378	HOXD10	NM_002148.2	123	gcctcagagctcaagctttta	5211	444854	transcription regulator	RNA polymerase II	
1379	HOXD10	NM_002148.2	312	cgcaacgctctcttgaaatga	5219	444862	see also 1378 line	transcription factor -	
1380	HOXD10	NM_002148.2	410	ttctgatgctgctcaactca	5222	444866	see also 1378 line		
1381	HOXD10	NM_002148.2	412	cgctgaagcgaacaactcaatt	5223	444867	see also 1378 line		
1382	HOXD10	NM_002148.2	539	caaccgggaaccccaagagaca	5227	444869	see also 1378 line		
1383	HRC	NM_002152.1	2192	ttccgaagctctcttgactttt	146738	661791		calcium ion binding	
1384	HSP44	NM_002154.3	1178	aaactgataagtaggcaaatctc	85188	503387			
1385	TNC	NM_002160.1	6781	ggatattggagcaataaccca	181468	662332			
1386	IARS	NM_002161.2	468	ctgaatgaattctactgttagc	85465	501152		AP-(c-Jun homodimer)	
1387	ICSBP1	NM_002163.1	1120	cccccttgcgtccaaactcaatt	323	444851		hematopoietic-associated factor	
1388	ICSBP1	NM_002163.1	1121	cccccttgcgtccaaactcaatt	324	444852	see also 1387 line	1B complex	arthritis (關節炎)
1389	ICSBP1	NM_002163.1	1122	cccccttgcgtccaaactcaatt	325	444853	see also 1387 line		
1390	IDH2	NM_002168.2	446	ggccctcttgaaagctcaagc	220281	782259		isocitrate dehydrogenase (NADP+)	
1391	IDH2	NM_002168.2	605	cgcccgctgagcagctcaagc	220282	782261	see also 1390 line		
1392	IL1RAP	NM_002182.2	1864	ggagcaacacagctctatttc	123185	527748	receptor activity		
1393	IL1RAP	NM_002182.2	1760	gaaggcgcagcagctcaatatt	123187	527749	see also 1392 line		
1394	IL1RAP	NM_002182.2	1762	cggtctccagctgctcaatagg	123188	527751	see also 1392 line		
1395	IL6ST	NM_002184.2	2309	atggcatttcaattcgtgtaagt	124044	631943	receptor activity, signal transduction		
1396	IL7R	NM_002185.2	911	cgactctcccgatcataagaaga	123933	631974	receptor activity, signal transduction	interleukin-7 receptor	
1397	IL7R	NM_002185.2	996	ttcttgatgctccagattctatg	123935	631980	see also 1396 line		
1398	INHA	NM_002191.2	1178	atggagttactctttcaagtat	131868	535887	apoptosis, signal transduction	hormone	
1399	INHA	NM_002191.2	1179	tggagttactctttcaagtatg	131869	535888	see also 1398 line		
1400	ACOI	NM_002197.1	481	atctatctatccagctgtttctc	49588	471537		aconitate	
1401	ACOI	NM_002197.1	506	cgaaagcgaagctgattacaga	49589	471539	see also 1400 line		
1402	IRF1	NM_002198.1	238	tgcagatttaattccaacaattc	5452	697282	transcription regulator	translation	small cell lung cancer (肺癌), arthritis (關節炎), myelodysplastic syndrome (骨髓異形成症候群)
1403	ISL1	NM_002202.1	366	tgaagatgcggaggtgatcca	5572	445109		RNA polymerase II	
1404	ISL1	NM_002202.1	371	atgtcgagctgctgactcaatt	5573	445110	see also 1403 line	transcription factor	diabetes mellitus (糖尿病), diabetes (糖尿病)

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1439	KCNMA1	NM_002247.2	802	ttctcaaaagtcttcaatcaca	29330	460716	-	-	-
1440	KCNMA1	NM_002247.2	1008	agagctatgagcttcttcaaaa	29335	460723	see also 1439 line	-	-
1441	KCNMA1	NM_002247.2	1076	agagctatgagcttcttcaaaa	29336	460727	see also 1439 line	-	-
1442	KCNMA1	NM_002247.2	1285	agctctaatgagcttcttcaaaa	29349	460748	see also 1439 line	-	-
1443	KCNMA1	NM_002247.2	2359	atgagctatgagcttcttcaaaa	29364	460763	see also 1439 line	-	-
1444	KCNMA1	NM_002247.2	2718	agctctaatgagcttcttcaaaa	29377	460771	see also 1439 line	-	-
1445	KCNMA1	NM_002247.2	2760	ctgagctatgagcttcttcaaaa	29378	460772	see also 1439 line	-	-
1446	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1447	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1448	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1449	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1450	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1451	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1452	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1453	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1454	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1455	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1456	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1457	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1458	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1459	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1460	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1461	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1462	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1463	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1464	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1465	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1466	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1467	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1468	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1469	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1470	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1471	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1472	KCNMA1	NM_002247.2	2784	agctctaatgagcttcttcaaaa	29381	460774	see also 1439 line	-	-
1473	LBR	NM_002296.2	1325	tggagctatgagcttcttcaaaa	30204	484876	receptor activity	-	hydraps-ectopic calcification-moth-eaten skeletal dysplasia(異所石灰化骨形成症)
1474	LCP1	NM_002298.2	855	ctgagctatgagcttcttcaaaa	117912	523294	calcium ion binding	-	Pelger-Huet anomaly(ペルジャー-ヒューエット-核異)
1475	LFR	NM_002310.2	3235	tacagctatgagcttcttcaaaa	243815	632075	signal transduction	-	non-hodgkin lymphoma(非ホジキンリンパ腫)
1476	LFR	NM_002310.2	3235	tacagctatgagcttcttcaaaa	243815	632075	leukemia inhibitory	-	factor receptor
1477	LFR	NM_002310.2	3379	agctctatgagcttcttcaaaa	243826	632079	see also 1475 line	-	-
1478	LFR	NM_002310.2	3399	agctctatgagcttcttcaaaa	243827	632081	see also 1475 line	-	-
1479	LFR	NM_002310.2	3401	agctctatgagcttcttcaaaa	243828	632082	see also 1475 line	-	-
1479	LFR	NM_002310.2	3402	agctctatgagcttcttcaaaa	243829	632083	see also 1475 line	-	-

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1480	LG3	NM_002311.2	449	ctcagcagctgctatcaaaagt	30543	461199	-	-	-	-
1481	LG3	NM_002311.2	451	ctggagctgatacaaaagt	30544	461200	see also 1480 line	-	-	-
1482	LG3	NM_002311.2	1597	agcagctcagctgctcaaat	30570	461228	see also 1480 line	-	-	-
1483	LG3	NM_002311.2	1939	acgcagctcagctgctcaaat	30578	461237	see also 1480 line	-	-	-
1484	LG4	NM_002312.2	282	ctcacaactcaaaactgt	30599	506500	-	DNA ligase (ATP)	-	-
1485	ABLMT	NM_002313.4	675	accagagctcagctgctcaatca	115022	521125	-	-	-	-
1486	ABLMT	NM_002313.4	1213	atctctctcagagctgctcaatca	115044	521145	see also 1485 line	-	-	-
1487	ABLMT	NM_002313.4	1217	atctctctcagagctgctcaatca	115045	521146	see also 1485 line	-	-	-
1488	ABLMT	NM_002313.4	1614	gctctagagctcctcaaatctcc	115058	521151	see also 1485 line	-	-	-
1489	LMK1	NM_002314.2	788	ctgcagcagcccaagctgtaga	88511	506595	-	kinase, related, signal transduction	-	Williams-Baruren syndrome(ウィリアムズ症候群)
1490	LOX	NM_002317.3	1354	ttccagctgagctgattatcaga	163087	506801	-	protein-tyrosine phosphatase	-	-
1491	LRP1	NM_002332.1	2291	gttgagctgagctgagcaaatct	147393	549320	receptor, activity	-	-	-
1492	LRP1	NM_002332.1	2436	cactcaatgagctgagctgctg	147403	549326	see also 1491 line	-	-	-
1493	LRP1	NM_002332.1	3150	gccctcgcagcagctgctgctg	147411	549337	see also 1491 line	-	-	-
1494	LRP1	NM_002332.1	5189	aaccacactgctatgagtttaa	147432	549359	see also 1491 line	-	-	-
1495	LRP1	NM_002332.1	5191	caccacactgctatgagtttaa	147433	549360	see also 1491 line	-	-	-
1496	LRP1	NM_002332.1	7695	accgctatgtcctcaaatgca	147454	549403	see also 1491 line	-	-	-
1497	LRP1	NM_002332.1	9663	accgagacagatgctactgac	147473	549426	see also 1491 line	-	-	-
1498	LRP1	NM_002332.1	12718	caagcaacagagcctcaatcc	147503	549463	see also 1491 line	-	-	-
1499	LRP6	NM_002336.1	170	gcgctgctgctgctgctcaatg	133382	636400	signal transduction	-	-	-
1500	LRP6	NM_002336.1	236	agctctgctgctgctgctctta	133384	636402	see also 1499 line	-	-	-
1501	LRP6	NM_002336.1	288	agcagagaccccttaactganc	133386	636404	see also 1499 line	-	-	-
1502	LRP6	NM_002336.1	488	tgtatctacccctgctgctgct	133396	636412	see also 1499 line	-	-	-
1503	LRP6	NM_002336.1	754	atctctgctgctgctgctgct	133405	636425	see also 1499 line	-	-	-
1504	LRP6	NM_002336.1	949	tgctgctgctgctgctgctgct	133411	636437	see also 1499 line	-	-	-
1505	LRP6	NM_002336.1	979	cagtcagcagctgctgctgctgct	133413	636439	see also 1499 line	-	-	-
1506	LRP6	NM_002336.1	2544	ctcacaacagctgctgctgctgct	133485	636484	see also 1499 line	-	-	-
1508	LRP6	NM_002336.1	2907	atcacaacagctgctgctgctgct	133493	636488	see also 1499 line	-	-	-
1509	LRP6	NM_002336.1	3369	tccgtgctgctgctgctgctgct	133505	636505	see also 1499 line	-	-	-
1510	LRP6	NM_002336.1	3437	tccgtgctgctgctgctgctgct	133508	636508	see also 1499 line	-	-	-
1511	LRP6	NM_002336.1	3439	cagatctcgcagctgctgctgct	133509	636509	see also 1499 line	-	-	-
1512	LRP6	NM_002336.1	3543	tgctctatgctgctgctgctgct	133513	636517	see also 1499 line	-	-	-
1513	LSAMP	NM_002338.1	83	ctgttcagagctgctgctgctgct	319178	759881	-	-	-	-
1514	LSAMP	NM_002338.1	609	ctctctgctgctgctgctgctgct	319187	759890	see also 1513 line	-	-	-
1515	LSAMP	NM_002338.1	610	tccctgctgctgctgctgctgct	319188	759891	see also 1513 line	-	-	-
1516	LSAMP	NM_002338.1	612	ctcgcagctgctgctgctgctgct	319189	759892	see also 1513 line	-	-	-
1517	LSAMP	NM_002338.1	615	ctcgcagctgctgctgctgctgct	319190	759893	see also 1513 line	-	-	-
1518	LV75	NM_002349.1	1585	gagagacctgctgctgctgctgct	175337	568835	receptor, activity	-	-	-
1519	LV75	NM_002349.1	3551	cagctcagctgctgctgctgctgct	175411	568903	see also 1518 line	-	-	-

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1520	LY75	NM_002348.1	3980	ttctatgtctatctttagaataaa	175426	568916	see also 1518 line				
1521	LY75	NM_002348.1	4410	tgtgttggtctctcaactctcaaa	175434	568929	see also 1518 line				
1522	TAGSD1	NM_002354.1	599	accatctggtctctcttgaact	327545	697557	transcription_regulat	-	transcription_factor	-	
1523	MAD	NM_002357.1	315	tatgcagctcaactccacacgaag	6240	461316	or	transcription_regulat	p18(MAFG)/p45	-	
1524	MAPG	NM_002359.1	639	accagctctcatccacatgaaa	6311	481365	or	transcription_regulat	heterodimer	-	
1525	MAN2A1	NM_002372.1	1173	gttgttggtattattatgatttc	20035	592087			mannosyl-	-	
1526	MAP2	NM_002374.2	432	gggtcacaggccactctatcaaa	121650	526775			oligosaccharide 1,	-	
1527	MAP2	NM_002374.2	521	tgcagaagtattctcaagtgtctc	121655	526780	see also 1526 line		3-1, 6-alpha-	-	
1528	MAP2	NM_002374.2	5223	cgacttcgctctatttaccacacc	121754	526868	see also 1526 line		mannosidase	-	
1529	MARK3	NM_002376.3	2201	aacggctgcacccgcacatctaat	90304	507995	kinase related		protein tyrosine	-	
1530	MARK3	NM_002376.3	2203	cggtcgaaccgcacatataatgg	90305	507997	see also 1529 line		kinase	-	
1531	MATK	NM_002379.2	1551	aagtcgggtctctggagcttttgg	90429	508071	cell cycle		-	-	
1532	MATN1	NM_002379.2	1262	acgcgaagactctcaactctcgc	288884	686504			extracellular matrix	-	
1533	MATN1	NM_002379.2	1646	ccgcagcagccagctcaacttaat	288887	686510	see also 1532 line		structural	-	
1534	MATN2	NM_002380.2	2081	gcacatgacctctgctctttctga	148148	706541			constituent	-	rheumatoid arthritis (関節リウマチ)
1535	MAX	NM_002382.3	258	atgcacgaggaacgaatacggag	8315	445428			-	-	
1536	MDM2	NM_002392.1	482	tggccgctattatttgctcaaac	233223	537472	transcription_regulat		-	-	Well-differentiated liposarcoma(高分化脂肪肉腫), rhabdomyosarcoma(肉芽状横紋筋肉腫), liposarcoma(脂肪肉腫), chondrosarcoma(軟骨肉腫), osteosarcoma(骨髄性骨肉腫), ovarian cancer(卵巣性卵巣癌), leukemia(白血病), testicular cancer(睾丸癌), nerve sheath tumors(神経鞘腫), astrocytic tumors(星状細胞腫)
1537	MDM2	NM_002392.1	1202	ttctctgctctactctgaact	233232	537478	see also 1536 line		apoptosis,	-	
1538	MDM4	NM_002393.1	760	atgctctcaactctgtttacagcaa	308821	690336	or	transcription_regulat	protein binding	-	
1539	MDM4	NM_002393.1	794	gggtactctctctttctgaata	308823	690337	see also 1538 line		-	-	
1540	MDM4	NM_002393.1	1082	agcaagaagctctctttctgttg	308829	690346	see also 1538 line		inhibits	-	
1541	ME2	NM_002396.2	829	gcacgaacacactcttaactcttc	220867	608008			dehydrogenase (oxaloacetate)	-	
1542	MEF2C	NM_002397.2	928	tctctctcggaggaabaagtatgt	6397	445447	or	transcription_regulat	decarboxylating	-	
								regulator	-	-	

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1543	MEF2C	NM_002397.2	1253	dccagatgagctcactcttgg	6405	445459	see also 1542 line	
1544	MEF2C	NM_002397.2	1290	tccgtagcaactccacttacc	6406	445461	see also 1542 line	RNA polymerase II transcription factor
1545	MEIS1	NM_002398.1	117	ggctccctccctccagatcctgg	6409	441268	or	
1546	MEIS1	NM_002398.1	194	tccctcctcctccctccagctacc	6410	441269	see also 1545 line	
1547	MEIS1	NM_002398.1	282	ctgcacaaagcgtcttaaaaga	6411	441271	see also 1545 line	
1548	MEIS1	NM_002398.1	270	ggcctctttaaagcttaaaaga	6413	441272	see also 1545 line	
1549	MEIS1	NM_002398.1	398	ctcgtctcagatcctcttaattg	6414	441274	see also 1545 line	
1550	MEIS1	NM_002398.1	401	ctctcgtcagctctccttaattg	6415	441276	see also 1545 line	
1551	MEIS1	NM_002398.1	444	cagatctgcgcagaaacacctct	6419	441283	see also 1545 line	
1552	MEIS1	NM_002398.1	598	aagggaacactctctcgttttg	6421	441291	see also 1545 line	
1553	MEIS1	NM_002398.1	608	ggctatcctggttggtctatgagc	6422	441292	see also 1545 line	
1554	MEIS1	NM_002398.1	671	aagatcagcaaatcttaactgacc	6423	441296	see also 1545 line	
1555	MEIS1	NM_002398.1	867	aagggcacaaagctccacaaaa	6425	441299	see also 1545 line	
1556	MEIS2	NM_002398.2	1830	agcacagagcccccacaaagttaa	6459	445868	or	
1557	MGAT2	NM_002408.2	490	atagattctccatctcacaacgc	210571	759589		transferring glycosyl groups
1558	MGAT2	NM_002408.2	1055	cagatattctacccttagaattgt	210580	759598	see also 1557 line	carbohydrate-deficient glycoprotein syndrome (-)
1559	MGAT2	NM_002408.2	1670	ctgtgtatctgcctccaaagaaa	210587	759614	see also 1557 line	
1560	MGAT2	NM_002408.2	1688	ctcagagagccccaatttagtcca	210589	759616	see also 1557 line	
1561	MGAT3	NM_002409.3	249	gagagctccacagctctctctcca	210498	701591		transferring glycosyl groups
1562	MGAT3	NM_002409.3	251	gagctcacaagctctctctctcag	210499	701592	see also 1561 line	
1563	MMP1	NM_002421.2	739	ctcttgatctctccctctctact	148441	558789		Ap-1(c-Jun/c-Fos heterodimer)
1564	MMP13	NM_002421.2	1365	gaccatacaatttgaataacagc	148544	550287		zinc binding
1565	MMP15	NM_002428.1	1430	tccctctatgcctccttttaccagc	158130	558671		zinc binding
1566	MNAT1	NM_002431.1	206	tccgggtgaacctcttttgaaga	158436	669139	or	cell cycle, kinase, related, transcription, regulat
1567	MOG	NM_002433.1	1010	gggtccctctcttggaagtaacc	314205	692898		zinc binding
1568	MPPI	NM_002436.2	453	tggggatkatgactctagaatc	209380	681179	signal transduction	
1569	MPPI	NM_002436.2	939	tgcgtctccctccctcttcaagac	209385	681189	see also 1568 line	guanylate kinase
1570	MRC1	NM_002438.1	2119	ttatttttaactctcaagattttt	148689	567659	receptor activity	
1571	MRC1	NM_002438.1	2120	tgatttttaactctcaagattttt	148690	567660	see also 1570 line	
1572	MRC1	NM_002438.1	3973	agtcacacaccttttggatgg	148738	567707	see also 1570 line	
1573	MRC1	NM_002438.1	4076	ccctctcagcagcaggaatgac	148740	567708	see also 1570 line	
1574	MSH5	NM_002441.2	819	cgggttggaactggaagactata	18641	481020		

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1575	MSH5	NM_002441.2	2197	gagcgaacacgtgacaacgc	16687	451643	see also 1574 line		
1576	MSH1	NM_002442.2	111	cgagagaccccttcagatcttgc	52801	472417	-	-	
1577	MSH1	NM_002442.2	162	agagagagctgcgcgaatcttgc	52802	472419	see also 1576 line		
1578	MSH1	NM_002442.2	311	cagcagctgcgcgaacacacat	52805	472423	see also 1576 line		
1579	MSH1	NM_002442.2	314	gagctgcgcgcgaacacacatgc	52807	472424	see also 1576 line		
1580	MSN	NM_002444.1	866	gtcatcaagccatttcacaaaaa	287497	661802	-	structural constituent of cytoskeleton	-
1581	MYBPCL	NM_002465.1	829	aagcgcgcagcttttcacaaat	118019	788818	-	structural constituent of muscle	-
1582	MYBPCL	NM_002465.1	831	gagctcagcttttcacaaatgc	118020	788819	see also 1581 line		
1583	MYBPCL	NM_002465.1	2112	aactcttgcgcgaagagatga	118067	788856	see also 1581 line		
1584	MYBPCL	NM_002465.1	2330	atgcctatgtctgcagatctgc	118070	788859	see also 1581 line		
1585	MYBPCL	NM_002465.1	2338	gtctcagatgtcttttcgaagc	118071	788860	see also 1581 line		
1586	MYC	NM_002467.2	836	accagcctgcgcgaacacagc	7233	446140	transcription, regulation of cell cycle	transcription factor-7-like-2-E	mycosis fungoides(菌状悪肉腫)、 chondrosarcoma(軟骨肉腫)、non-hodgkin lymphoma(非ホジキンリンパ腫)、breast cancer(乳癌)、osteosarcoma(骨嚢性骨肉腫)、Ewing's sarcoma(ユーイング肉腫)、astrocytic tumors(星状腫瘍)
1587	MYC	NM_002467.2	1641	gcgaagacgcgcgaacacatga	7239	446148	see also 1586 line		
1588	NASP	NM_002482.2	299	tcacagagacgcgcgccttttc	301258	530125	-	-	-
1589	NASP	NM_002482.2	306	agcagcgccttttcgcgcgaagc	301260	530126	see also 1588 line		
1590	NUBP1	NM_002484.1	886	gagctbcagagatataatcaga	95171	510662	-	molecular function	-
1591	NBS1	NM_002485.3	603	ctcatatttgcgcgtcgaattgt	16977	690423	cell cycle		Nijmegen breakage syndrome(Nijmegen 染色体切断症候群)、non-hodgkin lymphoma(非ホジキンリンパ腫)
1592	NDUFA6	NM_002490.2	178	acggataaagtccgcgaattgt	222655	610001	-	NADH dehydrogenase (ubiquinone)	-
1593	NDUFA6	NM_002490.2	180	ggagataagtccgcgaattgttt	222656	610002	see also 1592 line		
1594	NDUFS4	NM_002495.1	247	tgtgtctctgcgcgaatcaatgc	222893	610140	-	NADH dehydrogenase (ubiquinone)	complex I deficiency(複合体I欠損症、Leigh syndrome(U-症候群))
1595	NEO1	NM_002499.1	582	cagctcttcgaagatttaccagc	312575	683684	-	molecular function	-
1596	NEO1	NM_002499.1	1328	ttagctctgtgtgaatcaatcaga	312598	683702	see also 1595 line		
1597	NEO1	NM_002499.1	1961	ctgctgcgcgcacataaatacaga	312619	683717	see also 1595 line		
1598	NEO1	NM_002499.1	2302	ctgcctgcctctgcgaactttgc	312628	683726	see also 1595 line		
1599	NEO1	NM_002499.1	2485	gcacataaagtgcgcctataaac	312630	683730	see also 1595 line		
1600	NEO1	NM_002499.1	3137	gcacataaagtcgcgcctatttgc	312651	683751	see also 1595 line		
1601	NEO1	NM_002499.1	3294	aaicgcagctctctgcgcgcgaatgc	312659	683759	see also 1595 line		

1602	NEO1	NM_002498.1	3295	agcgaactcctctgaaataatgc	312660	663759	see also 1595 line
1603	NEO1	NM_002498.1	3895	tcctcatcattccctctgataatgc	312673	663773	see also 1595 line
1604	NEO1	NM_002498.1	4427	gactccagaatcgaactgaataacc	312679	663781	see also 1595 line
1605	NEO1	NM_002498.1	4471	agcccaaccctgaagaactaatga	312680	663782	see also 1595 line
1606	NEUROD1	NM_002500.1	1039	agcccaaccctgaagaactaatgc	33741	462599	translation regulator diabetes mellitus (糖尿病)
1607	NFX	NM_002501.1	540	ttggagtcacaatacgaagactgc	399	446675	transcription_regulator translation regulator
1608	NFX	NM_002501.1	591	tcctggatccagcgaactcagatga	400	446676	see also 1607 line
1609	NFX	NM_002501.1	593	cggatccagcgaactcagatga	401	446677	see also 1607 line
1610	NFX	NM_002501.1	593	cggatccagcgaactcagatga	402	446678	see also 1607 line
1611	NFX	NM_002501.1	746	cagatccagcgaactcagatga	403	446683	see also 1607 line
1612	NFX	NM_002501.1	1169	agcagctcagcgcgattatcagc	405	446688	see also 1607 line
1613	NFX1	NM_002504.3	2392	gtgtgacccatccagatataatt	8081	446844	transcription_regulator or
1614	NFX1	NM_002504.3	2394	gtgaccatccagatataatt	8082	446845	see also 1613 line
1615	NFX1	NM_002504.3	2499	tcctcgtcgaactgttgatatac	8085	446848	see also 1613 line
1616	NFX1	NM_002504.3	2505	gtcactgttgatataattcttc	8086	446851	see also 1613 line
1617	GPMB	NM_002510.1	1189	agcccaaccatcaaatctagaagg	308779	567336	melanoma (メラノーマ)
1618	NPAS2	NM_002518.2	569	aacagagcgcagcatcatcagc	8189	446914	transcription factor
1619	NPTX1	NM_002522.1	575	agcagtaacagccgcctcaattcc	305743	697955	molecular_function unknown
1620	NPTX2	NM_002523.1	1280	agctcagcagcattcaactatgc	175569	569073	nardlysin
1621	NRD1	NM_002525.1	371	ccctctcagcagcagatgaatct	184379	578252	see also 1621 line
1622	NRD1	NM_002525.1	473	acctctacatcaaatctcaaat	184386	578261	see also 1621 line
1623	NRD1	NM_002525.1	1124	gtgatactcctcaactgattgt	184400	578267	see also 1621 line
1624	NRD1	NM_002525.1	2570	gtggtccacagctggagatgaa	184441	578297	see also 1621 line
1625	NRD1	NM_002525.1	3207	agccctctggaacacatctctcc	184456	578317	see also 1621 line
1626	NRD1	NM_002525.1	3553	agctcagctcagctatgctgagc	184470	578322	see also 1621 line
1627	NRD1	NM_002525.1	3771	ccctctcataaataagcnaat	184478	578326	see also 1621 line
1628	NTSE	NM_002526.1	829	tggaagagaccattcattatgca	197269	599516	IMP-GMP specific 5'-nucleotidase
1629	NTF3	NM_002527.2	702	aggaagcagcagcgtctcaaaaac	169392	538391	apoptosis, signal transduction
1630	NUP88	NM_002532.3	80	tcctaaacagctgcttcttcgc	274032	772968	growth factor
1631	NVL	NM_002533.1	479	aggaagatgattttatgacaaa	59177	488043	—
1632	OAZ2	NM_002537.1	214	aacccaccagcagatgattttt	149306	664356	ornithine decarboxylase inhibitor
1633	OAZ2	NM_002537.1	262	cagctctcagcgaactgatttc	149307	664358	see also 1632 line
1634	OAZ2	NM_002537.1	367	ctcagctctataataagaagc	149308	664361	see also 1632 line
1635	ODF2	NM_002540.3	410	tggtcaaccactgaactcgtga	292164	704566	—
1636	ODF2	NM_002540.3	737	agcagatctcagctgaaatacc	292132	704571	see also 1635 line

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1637	OGPH	NM_002541.1	158	ttcaacagctggctgtctattct	225465	611870	oxoputarate dehydrogenase (liposoma)	Parkinson disease(パーキンソン病)
1638	OGDH	NM_002541.1	210	tggagctagtggactatgttgg	225466	611871	see also 1637 line	
1639	OMG	NM_002544.2	1397	ctctctataaaccttacttga	319430	663351	-	-
1640	OMG	NM_002544.2	2260	agctgcacactctcaattcttc	319462	663378	see also 1639 line	
1641	OPHN1	NM_002547.1	1951	gttactgggcaataagaacatc	296846	665686	Rho GTPase activator	mental retardation(精神遅滞)
1642	ORC4L	NM_002552.2	223	aagaatttctcgtgaagatttt	20638	463303	signal transduction	-
1643	ORC4L	NM_002552.2	273	tggatgtcaagctcaactccaa	20641	463304	see also 1642 line	
1644	ORC4L	NM_002552.2	732	gtcttcaactgagctgtgattat	20651	463312	see also 1642 line	
1645	ORC4L	NM_002552.2	1130	tggaaactctgtctataatgac	20672	463325	see also 1642 line	
1646	ORC5L	NM_002553.2	851	aactgtgactctgcaactcttga	20695	510816	-	-
1647	ORC5L	NM_002553.2	860	ctctgcacactctgagaatttt	20696	510817	see also 1646 line	
1648	P2RX1	NM_002558.2	907	gtgaagcgtgtgagactttgg	95277	510808	receptor activity, channel, apoptosis, ATP-gated cation channel	-
1649	P2RX1	NM_002558.2	1511	tgcctatggtgctctactaaag	95281	510915	see also 1648 line	
1650	P2RY1	NM_002563.2	1092	actctctgctacatgtctaattt	241073	628428	receptor activity, nucleotide receptor, G- protein coupled	-
1651	P2RY1	NM_002563.2	1094	tgcctgtgctgctgttactttgg	241074	628429	see also 1650 line	
1652	FURIN	NM_002568.2	765	gcctctgtgctacacacagctgag	182868	576425	Smad3/Sp-1 heterodimer	-
1653	FURIN	NM_002568.2	768	tgcctgctacacagctgagctgac	182867	576426	2-acetyl-1- allylglycerophosph ocholine esterase	-
1654	PAFAH1B2	NM_002572.1	663	ctgcacacacatgtttgatttct	200164	591840	Smad3/Sp-1 heterodimer	-
1655	PAFAH1B2	NM_002572.1	664	tgcacgcactgtttgttttct	200165	591841	see also 1654 line	
1656	SERPINE2	NM_002575.1	595	ctgtgtgtcaagctcaacacaaag	183575	577403	apoptosis kinase related, apoptosis	-
1657	PAK1	NM_002576.2	428	cccaagccctcctcgtgagaat	95447	511039	protein tyrosine kinase	mental retardation(精神遅滞)
1658	PAK3	NM_002578.1	135	agccagactgtgctctactctcc	95493	511068	kinase related	
1659	PAK3	NM_002578.1	262	accaggaattctcgtgaattcc	95496	511073	see also 1658 line	
1660	PAK3	NM_002578.1	1370	aactgaaccctcctcctctaat	95519	511110	see also 1658 line	
1661	PAK3	NM_002578.1	1371	ggctgaaccctcctcctctaat	95520	511111	see also 1658 line	
1662	PAK3	NM_002578.1	1376	ccctctcctctctaatgaatctc	95521	511112	see also 1658 line	
1663	PBX1	NM_002585.1	1176	gtactcaatagggtactttctac	8968	447800	transcription, regulat ion	lymphoblastic leukemia(リンパ性白血病)
1664	PBX2	NM_002586.3	1293	cagctctctctcgtctctctaat	8970	447805	transcription, regulat ion	lymphoblastic leukemia(リンパ性白血病)

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1665	PBX2	NM_002588.3	1299	ctctgagcctctcaactctctca	8971	447608	see also 1664 line		
1666	PDHGC3	NM_002588.2	610	agacacattctcaacacattg	150532	744822	-	-	
1667	PDHGC3	NM_002588.2	1637	ccctcttctccatcaattctga	150557	744859	see also 1666 line		
1668	PDHGC3	NM_002588.2	1643	ttccatcaaatcttgcattctg	150558	744860	see also 1666 line		
1669	PDH7	NM_002589.2	3988	tgcacagagctgagctgctctca	149554	551398	-	-	
1670	PDH7	NM_002589.2	3992	cagagctgagctgagctgctctca	149555	551399	see also 1669 line		
1671	PDH7	NM_002589.2	3994	agctgagctgagctgagctgagct	149556	551400	see also 1669 line		
1672	PDH8	NM_002590.2	3191	tcctctctcagagcaattact	149584	551432	-	-	
1673	PDH8	NM_002590.2	3193	ctctctcagagcaattact	149585	551433	see also 1672 line		
1674	PDH8	NM_002590.2	3248	ggagctctgagaaagctcttc	149586	551438	see also 1672 line		
1675	PCSK2	NM_002594.2	1966	tgcacagctgagcttctgacc	183096	576823	-	subtilase	
1676	PGT2	NM_002595.2	869	gtctcagaagctgtatctataga	95975	511408	kinase, related, cell cycle	protein serine/threonine kinase	
1677	PGT2	NM_002595.2	1082	ttggagagctgctatctgaca	95982	511412	see also 1676 line	-	
1678	PGT2	NM_002595.2	1518	gacctctcaaatgaagtctca	95992	511422	see also 1676 line	-	
1679	PGT3	NM_002596.1	1608	agagacactgctcatctctcc	96011	511450	-	-	
1680	PDE4B	NM_002600.2	1305	aacctcaatgctgactttgag	197842	590150	signal transduction phosphodiesterase	-	
1681	PDE4B	NM_002600.2	1306	acctcaatgactgactttgag	197843	590151	see also 1680 line	-	
1682	PDE7A	NM_002603.1	221	gttgcactcttctctatgacatt	197917	590389	signal transduction	-	
1683	PDE7A	NM_002603.1	629	ttgcactctctctatgacattg	197938	590408	see also 1682 line	-	
1684	PDE7A	NM_002603.1	1334	acctcaatgactgactttgag	197966	590434	see also 1682 line	-	
1685	PDE8A	NM_002605.1	612	ttgcactctctctatgacattg	161884	551529	signal transduction	signal transducer	
1686	PDE8A	NM_002605.1	1134	catctgctctcatctgacattg	161903	551530	see also 1685 line	-	
1687	PDGFRB	NM_002609.2	3140	tgcctcagagagctatctgaga	96094	511603	receptor activity, signal transduction	platelet-derived growth factor receptor	leukemia (白血病)
1688	POK1	NM_002610.3	721	aggaagtctcatctctcagaac	96124	499219	kinase, related, signal transduction	pyruvate dehydrogenase (lipoamide) kinase	
1689	POK2	NM_002611.3	730	agctctgtgtgacaagtcttacc	96143	511613	kinase, related, signal transduction	pyruvate dehydrogenase (lipoamide) kinase	
1690	POZK1	NM_002614.3	265	taggatcaatggctttgttgg	274109	661370	-	-	
1691	PER1	NM_002616.1	2299	ccgcctgcctctgccaataag	254746	639329	transcription, regulation	signal transducer	
1692	PER1	NM_002616.1	2394	ccgcgaagtgcgaatcatcatc	254747	639330	see also 1691 line	-	
1693	PER1	NM_002616.1	2395	ccgcgaagtgcgaatcatcatc	254748	639331	see also 1691 line	-	
1694	PER1	NM_002616.1	2397	cggagatgcgaatcatcatcatg	254749	639332	see also 1691 line	-	
1695	PER1	NM_002616.1	2944	agccttgctgctctcctaactc	254750	639338	see also 1691 line	-	

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1866	PEX13	NM_002618.1	356	agcctccgttgatgaatctctc	269721	688579	-	adenoleukodystrophy(副腎臓白質ジストロフィー), peroxisome biogenesis disorder(ペルオキシソーム生成症)
1867	PEX13	NM_002618.1	357	agcctccgttgatgaatctctc	269722	688580	see also 1696 line	protein transporter
1868	PRP8	NM_002621.1	1701	agctccctcagcagcttctc	168453	523381	kinase related	magnesium binding
1869	PRP8	NM_002621.1	82	agctccctcagcagcttctc	168453	523381	kinase related	-
1700	PRN2	NM_002628.2	177	acggagagctctctccacac	118724	523340	-	-
1701	PRN2	NM_002628.2	177	acggagagctctctccacac	118731	523346	see also 1699 line	-
1702	PRN2	NM_002628.2	177	acggagagctctctccacac	118731	523347	see also 1699 line	-
1702	PRN2	NM_002628.2	269	atggacatccgcacagatcca	118734	523350	see also 1699 line	-
1703	PRN2	NM_002628.2	291	aaggttggagcgaacacacaa	118735	523351	see also 1699 line	-
1704	PHF1	NM_002636.3	375	gaagactgtccacactctatca	9227	463476	transcription_regulat	-
1705	PHF1	NM_002636.3	983	caagcccaagcagcttctctt	9235	463483	or	-
1706	PHF1	NM_002636.3	984	agcccaagcagcttctctt	9236	463484	see also 1704 line	-
1707	PHF1	NM_002636.3	985	agcccaagcagcttctctt	9237	463485	see also 1704 line	-
1708	PHKA1	NM_002637.1	1017	agacttcaagtggtttatggtg	121925	527098	kinase related	phosphorylase
1709	PHKA1	NM_002637.1	1195	cgagcaagcttcaagatataaa	121930	527104	see also 1708 line	kinase, regulator
1710	PHKA1	NM_002637.1	3076	tgcttctccacttcttcaat	121974	527155	see also 1708 line	-
1711	PHKA1	NM_002637.1	3080	tgcttccacttcttcaatgca	121975	527156	see also 1708 line	-
1712	PHKA1	NM_002637.1	3168	atgacttaaaagtgatataaa	121977	527158	see also 1708 line	-
1713	SERPINC5	NM_002639.1	556	gtgttaatgtccctcttctt	293346	663068	-	serpin
1714	PIGA	NM_002641.1	413	ctgcaacttctcaagtactatt	210221	602076	-	-
1715	PIGA	NM_002641.1	414	tgcatctctcagggacatatt	210222	602077	see also 1714 line	-
1716	PIGA	NM_002641.1	498	ctctcttctcagcagcagcag	210227	602084	see also 1714 line	-
1717	PIGA	NM_002641.1	804	tgcttctctcagggacatatt	210241	602092	see also 1714 line	-
1718	PIGF	NM_002643.2	509	tggagcccaacttcaagcttgg	205524	667568	-	-
1719	PK3C2A	NM_002645.1	1171	tggagcccaacttcaagcttgg	205524	667568	kinase related	-
1720	PK3C2A	NM_002645.1	1385	tgtctgtgacatgcttacttga	208888	597020	see also 1719 line	-
1721	PK3C2A	NM_002645.1	1388	ctggagacttgaacttacttga	208889	597021	see also 1719 line	-
1722	PK3C2A	NM_002645.1	1600	ctgcttaaatatgaaaacacttg	208875	597031	see also 1719 line	-
1723	PK3C2A	NM_002645.1	2220	ctgggttgaactatcatcttttc	209092	597057	see also 1719 line	-
1724	PK3C2A	NM_002645.1	2221	tgggttgaactatcatcttttc	209093	597058	see also 1719 line	-
1725	PK3C2A	NM_002645.1	3434	agatattgttctgttcttcaatg	209335	597084	see also 1719 line	-
1726	PK3C2A	NM_002645.1	3717	ctgtgtgagcactatgttttgg	208942	597100	see also 1719 line	-
1727	PK3C2A	NM_002645.1	4406	tccaatgaactcatgactatt	209359	597128	see also 1719 line	-
1728	PK3C3	NM_002647.2	2219	gtctgtgacacttctgttaag	207250	596961	kinase related	-
1729	PK3CG	NM_002649.2	1967	agacatttgagcagctatcagc	207480	597475	signal transduction	phosphatidylinositol 1,3-kinase, class III
1730	PK3CG	NM_002649.2	2580	agcctctgttcttccagttttt	207494	597493	gpcr	-
1731	PK3CG	NM_002649.2	2582	gaactcttcttccagttttt	207495	597493	see also 1729 line	-
1732	PK3CG	NM_002649.2	3543	aagatgagccttctgttctt	207527	597528	see also 1729 line	-

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1733	PIK4CB	NM_002651.1	498	agacatcttgacgaacacatct	207773	597021	-	-	-
1734	PIK4CB	NM_002651.1	632	ggcccaatttctcaaacatgac	207776	597025	see also 1733 line	transcription_regulat	transcription_regulat
1735	PTTX1	NM_002653.3	1128	gcccaaacctgagctcaacaca	9347	447766	or	transcription_regulat	transcription_regulat
1736	PLAG1	NM_002655.1	490	gtcatctctggtttctcaga	9408	709773	or	transcription_regulat	transcription_regulat
1737	PLAG1	NM_002655.1	497	ctggatctctgagagcaga	9407	709774	see also 1736 line	transcription_regulat	transcription_regulat
1738	PLAG2	NM_002657.2	312	aaggaagtgccatctgaant	9447	707482	or	transcription_regulat	transcription_regulat
1739	PLAG2	NM_002657.2	390	caagagcaaccacatcatctgc	9451	707485	see also 1738 line	transcription_regulat	transcription_regulat
1740	PLAG2	NM_002657.2	1230	agcttgactactactactcttg	9460	707471	see also 1738 line	transcription_regulat	transcription_regulat
1741	PLG2	NM_002661.1	2076	gacttccaagccgctgactatga	151188	590823	signal transduction	signal transducer	signal transducer
1742	PLG2	NM_002661.1	3447	tctaaagcgcgtgtctgaaga	151201	590846	see also 1741 line	signal transduction	signal transducer
1743	PLD2	NM_002663.2	578	gtcccgagaccatctttrtat	197474	596937	signal transduction	phospholipase D	phospholipase D
1744	PLEK	NM_002664.1	759	tcgacgaagagccctatgattg	151281	681438	calcium ion binding	calcium ion binding	calcium ion binding
1745	PLRG1	NM_002669.1	694	gacttgcctartgtgcaaatataa	113200	706756	or	transcription_regulat	transcription_regulat
1746	PLRG1	NM_002669.1	1443	agctctaaacacattaaagtat	113226	706780	see also 1745 line	transcription_regulat	transcription_regulat
1747	PLRG1	NM_002669.1	1514	aaccagaantattcaagcgaag	113227	706782	see also 1745 line	transcription_regulat	transcription_regulat
1748	PMQL2	NM_002685.1	1349	ccagagatcacaccattactctgc	53417	485373	kinase related	protein ser/thr/tyr kinase	protein ser/thr/tyr kinase
1749	PNN	NM_002687.2	268	agacttgatcttcagatgatg	292363	698357	see also 1749 line	kinase	kinase
1750	PNN	NM_002687.2	684	ttagtgatgacagctcgaatttt	292374	698375	see also 1749 line	kinase	kinase
1751	POL2	NM_002689.2	1232	tctcgacagagtgtaattatg	263019	670162	-	Smad3/Sp-1 heterodimer	Smad3/Sp-1 heterodimer
1752	POLB	NM_002690.1	392	gattcatctcatcaattctctga	35738	463987	-	zeta DNA polymerase	zeta DNA polymerase
1753	POLB	NM_002690.1	520	agcgaattggcttgaaatatttt	35741	463971	see also 1752 line	zeta DNA polymerase	zeta DNA polymerase
1754	POLG	NM_002693.1	964	ctgggtgagagagcgttactcttg	35839	464216	-	zeta DNA polymerase	zeta DNA polymerase
1755	POU2F1	NM_002697.1	711	ctctctgcaagtcgaatacttca	9636	447815	or	transcription_regulat	transcription_regulat
1756	POU2F1	NM_002697.1	950	aaagcaatcaaacatttgattcca	9638	447820	see also 1755 line	transcription_regulat	transcription_regulat
1757	POU2F2	NM_002698.1	926	acgtccgtcgtctctgagagaag	9668	447849	or	transcription_regulat	transcription_regulat
1758	POU2F2	NM_002698.1	1195	agcaacaacgttactactcttgc	9670	447851	see also 1757 line	transcription_regulat	transcription_regulat
1759	POU4F3	NM_002700.1	113	ccccgcactctcaggttgatata	9703	447885	or	transcription_regulat	transcription_regulat
1760	POU4F3	NM_002700.1	114	ccccgcactctcaggttgatata	9704	447886	see also 1759 line	transcription_regulat	transcription_regulat
1761	POU4F3	NM_002700.1	115	ccccgcactctcaggttgatata	9705	447887	see also 1759 line	transcription_regulat	transcription_regulat
1762	POU4F3	NM_002700.1	770	ccccgcactctcaggttgatata	9710	447895	see also 1759 line	transcription_regulat	transcription_regulat

lipoblastoma(脂肪芽細胞腫), pleomorphic adenoma, genit(多能性腺ノマ)

transcription factor

2

transcription factor

2

transcription factor

2

transcription factor

2

transcription factor

2

transcription factor

2

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1763	PPPICB	NM_002709.1	1034	aacgaacatctgacacatatt	162205	561726	-	protein phosphatase type -	-
1764	PPPICB	NM_002709.1	1035	acagacatctacacattttt	162206	561727	see also 1763 line	-	-
1765	PPPIR3A	NM_002711.2	503	tgacacacatctgacatttt	195520	746566	phosphatase,	-	diabetes mellitus(糖尿病), diabetes(糖尿病)
1766	PPPIR3A	NM_002711.2	713	ggcgtctaaaggacatcaag	195928	746606	see also 1765 line	protein phosphatase type 2C or,	-
1767	PPP2CA	NM_002715.1	1025	agctgaacatcaggaactgcag	162260	561750	phosphatase, apoptosis, cell cycle, transcription_regulator	protein phosphatase type 2C or,	-
1768	PPP6C	NM_002721.3	316	tagcagcaggtactactagttg	162311	561822	-	protein phosphatase type -	-
1769	PPP6C	NM_002721.3	332	tagtttgagacatctactacc	162312	561823	see also 1768 line	-	-
1770	PPP6C	NM_002721.3	472	atgcctactcctgagactactg	162319	561828	see also 1768 line	-	-
1771	PPP6C	NM_002721.3	515	cacagtagcagccttaataagtg	162320	561833	see also 1768 line	-	-
1772	PRKAG1	NM_002733.1	796	ggggcctctgtgacatctact	205928	671352	kinase, related, signal transduction	cAMP-dependent protein kinase	-
1773	PRKAR1A	NM_002734.2	1080	ttggagcctctgattttttag	1106038	539166	kinase, related, transcription_regulator	cAMP-dependent protein kinase, regulator	lupus erythematosus(内臓性エリテマトーデス), thyroid cancer(甲状腺癌), papillary Thyroid Carcinoma(甲状腺乳頭癌)
1774	PRKCA	NM_002737.1	1473	tggagatgcagagacacactga	97034	512047	kinase, related, cell cycle, signal transduction	protein kinase C	-
1775	PRKCB1	NM_002738.4	1618	tggagtgacacacacacactct	97060	512065	kinase related	protein tyrosine kinase	-
1776	PRKCI	NM_002740.3	877	caftaatcctatcatctctca	97228	512219	kinase, related, signal transduction	diacylglycerol binding	-
1777	PRKCI	NM_002740.3	893	tcctctaatcctgagctgttgg	97229	512220	see also 1776 line	-	-
1778	PRKCI	NM_002740.3	1339	ttcatgagcggggagtaatttat	97234	512235	see also 1776 line	-	-
1779	PRKCI	NM_002740.3	1342	atggcggggagataattataga	97235	512236	see also 1776 line	-	-
1780	PRKCM	NM_002742.1	772	gttgtcttgattaccataaga	97359	512264	kinase, related	diacylglycerol binding	-
1781	PRKCM	NM_002742.1	777	gtctgattcctaaagattgt	97361	512265	see also 1780 line	-	-
1782	PRKCM	NM_002742.1	786	ecctaaagatgctgattttaa	97362	512267	see also 1780 line	-	-
1783	PRKCM	NM_002742.1	2145	ttcatcactcctgtgttaaat	97400	512295	see also 1780 line	-	-
1784	PRKCM	NM_002742.1	2186	acpcttcaaaactatctttgtt	97401	512298	see also 1780 line	-	-
1785	PRKCM	NM_002742.1	2194	aaagattttttttatgaa	97402	512299	see also 1780 line	-	-
1786	PRKCM	NM_002742.1	2756	taatacagacactgttagattt	97417	512310	see also 1780 line	-	-
1787	MAPK1	NM_002745.2	821	ggactctcagaactatgtgaat	89826	507598	kinase, related, cell cycle, signal transduction	-	-

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1788	MAPK4	NM_002747.2	1357	tggagagatccatgacctttaac	89939	507706	kinase, related, cell cycle	MAP kinase	-
1789	MAPK6	NM_002748.2	1281	aagatcatgagctactatt	89947	507722	kinase, related, cell cycle, signal transduction	protein serine/threonine kinase	-
1790	MAPK7	NM_002749.2	785	caagctctc-atgctcgtatgt	90011	507773	kinase, related, cell cycle,	-	-
1791	MAPK8	NM_002750.2	31	agcgtacacaaattttatgt	90031	507768	kinase, related,	-	-
1792	MAPK8	NM_002750.2	353	tgcacattcttccaaatgattc	90039	507798	signal transduction	-	-
1793	MAPK8	NM_002750.2	544	caggaaacagattttatgac	90047	507805	see also 1791 line	-	-
1794	MAPK8	NM_002750.2	815	tgtctatctatcttttgaaac	90051	507812	see also 1791 line	-	-
1795	MAPK9	NM_002752.3	927	gcgctctctttcagacaaact	90067	507824	kinase, related	-	-
1796	MAPK9	NM_002752.3	222	aagcagcagatctgtatacaaa	90091	507842	see also 1795 line	-	-
1797	MAPK9	NM_002752.3	1045	ccacacacactcaatttatgat	90095	507853	see also 1795 line	-	-
1798	MAP2K1	NM_002755.2	984	ccpactctccatggcaattttg	88950	506747	kinase, related,	protein tyrosine kinase	bladder cancer(膀胱癌)
1799	MAP2K3	NM_002756.2	381	tggactctccagactctctcacc	88965	506758	kinase, related	-	-
1800	MAP2K3	NM_002756.2	469	agccttgaggtctgtgagaggg	88968	506759	see also 1799 line	-	-
1801	MAP2K5	NM_002757.2	1593	aagacactcttgagacaatgc	89004	506535	kinase, related,	-	-
1802	MAP2K5	NM_002757.2	1598	acgtatctggacaatttctta	89005	506536	signal transduction see also 1801 line	-	-
1803	PROX1	NM_002763.3	495	aagaggcgcgaactctatgaag	37093	465018	-	specific RNA polymerase II transcription factor	-
1804	PROX1	NM_002763.3	497	ggaggcgaactctatgaagtg	37094	465019	see also 1803 line	-	-
1805	PROX1	NM_002763.3	498	aggcgaactctgtagaagtc	37095	465020	see also 1803 line	-	-
1806	PROX1	NM_002763.3	698	cccttttgccagctactatga	37101	465028	see also 1803 line	-	-
1807	PROX1	NM_002763.3	816	gttgcttaaggagcgaataaaa	37104	465027	see also 1803 line	-	-
1808	PRPS2	NM_002765.2	604	ggggatgcacaagggtttactca	166886	598861	kinase, related	ribose-phosphate pyrophosphokinase	hyperuricemia(高尿酸血症)
1809	PRPS2	NM_002765.2	608	agccacaagggtttactcaattc	166888	598862	see also 1808 line	-	-
1810	PRPS2	NM_002765.2	609	gccaaagggtttactcaatttc	166869	598863	see also 1808 line	-	-
1811	PRPS2	NM_002765.2	850	gaccagcttttcagactaat	166863	598874	see also 1808 line	-	-
1812	PRSS11	NM_002775.2	521	gccaagatgaccacaagtgc	124939	528794	trypsin	-	-
1813	PRSS11	NM_002775.2	1021	ggagggccctttgtaaacctgc	124958	528809	see also 1812 line	-	-
1814	PSMA1	NM_002786.2	149	caggcgaagctttcaactatga	53601	579410	-	-	-
1815	PSMA4	NM_002789.3	172	ttccacgaaggtcgctttacc	185188	579437	-	protease endopeptidase	-
1816	PSMA4	NM_002789.3	175	ttccagagctcgctctaccag	185189	579438	see also 1815 line	-	-
1817	PSMA4	NM_002789.3	652	ttccagtggaacagactata	185206	579451	see also 1815 line	-	-
1818	PSMA7	NM_002792.2	652	agccattgaacagatgcctga	185237	579463	-	-	-

1819	PSMC2	NM_002803.2	385	tctgagagcccaaaatcaatta	98322	512704	-	adenosinetriphosphatase	-
1820	PSMC3	NM_002804.3	697	aggcccaacagagcaatacagga	98365	512739	transcription co-repressor	-	
1821	PSMC5	NM_002805.4	909	aaggttactcagctactaatag	98412	512788	-	transcription cofactor	-
1822	PSMC6	NM_002806.2	498	caagctatgagatatactctcc	98431	512816	-	protease	-
1823	PSMC6	NM_002806.2	644	tagggaatgctctggtgataca	98437	512820	see also 1822 line	-	-
1824	PSMD2	NM_002806.2	2266	ctcgcccaatgctctggtgataca	323226	750781	cell cycle	-	-
1825	PSMD2	NM_002808.3	2268	gcgcagctagctcaataatcag	323227	750782	see also 1824 line	-	-
1826	PSMD2	NM_002808.3	2269	gcgcagctagctcaataatcag	323228	750783	see also 1824 line	-	-
1827	PSMD3	NM_002809.2	1546	aggagatgagcaatcattcc	323439	688073	-	-	-
1828	PSMD7	NM_002811.3	333	atggtttgagcaatcatttt	57197	477171	-	-	-
1829	PSMD7	NM_002811.3	334	tgtttttgagcaatcatttt	57198	477172	see also 1828 line	-	-
1830	PSMD8	NM_002812.3	532	ctaaatgctctctctttgatta	302313	670873	cell cycle	-	-
1831	PSMD8	NM_002812.3	537	atgctctctctttgataaagg	302314	670874	see also 1830 line	-	-
1832	PSMD11	NM_002815.2	978	tccggatgacccaatcaccagc	323379	801915	-	-	-
1833	PSMD12	NM_002816.2	662	ctgcctactcttgaagatgaaca	323159	687996	-	-	-
1834	PSMD13	NM_002817.2	339	atccatgctgctctctctttt	323404	687615	-	-	-
1835	PSMD13	NM_002817.2	578	caagctctctctctctctctct	323409	687632	see also 1834 line	-	-
1836	PTPN4	NM_002830.2	1018	aagctgctgctctctctctctct	193740	587025	phosphatase	-	-
1837	PTPN4	NM_002830.2	1104	aagctgctctctctctctctctct	193744	587031	see also 1836 line	-	-
1838	PTPN4	NM_002830.2	1108	agctgctctctctctctctctct	193745	587032	see also 1836 line	-	-
1839	PTPN4	NM_002830.2	1272	gcgcacacacacacacacacac	193748	587041	see also 1836 line	-	-
1840	PTPN4	NM_002830.2	1302	ctctgctctctctctctctctct	193751	587043	see also 1836 line	-	-
1841	PTPN4	NM_002830.2	1401	agcagctctctctctctctctct	193758	587049	see also 1836 line	-	-
1842	PTPN4	NM_002830.2	1412	tgcagctctctctctctctctct	193759	587050	see also 1836 line	-	-
1843	PTPN4	NM_002830.2	2374	tgcagctctctctctctctctct	193808	587059	see also 1836 line	-	-
1844	PTPN4	NM_002830.2	2642	ctgagagccacacacacacacac	193811	587100	see also 1836 line	-	-
1845	PTPN4	NM_002830.2	2644	gcgcagccacacacacacacac	193812	587101	see also 1836 line	-	-
1846	PTPN4	NM_002830.2	3035	aattgaagctgctctctctctct	193822	587114	see also 1836 line	-	-
1847	PTPN4	NM_002830.2	3038	tgcagctgagcagctctctctct	193823	587115	see also 1836 line	-	-
1848	PTPN4	NM_002830.2	3371	caagcactctctctctctctct	193831	587128	see also 1836 line	-	-
1849	PTPN4	NM_002830.2	3451	atgctcaaacacacacacacac	193839	587130	see also 1836 line	-	-
							phosphatase, signal transduction	-	-
							gpcor	-	-
1850	PTPN6	NM_002831.3	991	aagagccctctctctctctctct	193861	586487	phosphatase	-	-
1851	PTPN9	NM_002833.2	1213	ggctgctctctctctctctctct	193869	588247	phosphatase	-	-
1852	PTPN9	NM_002833.2	1744	tgcagctctctctctctctctct	193909	588254	see also 1851 line	-	-
1853	PTPN9	NM_002833.2	1745	agcagctctctctctctctctct	193910	588255	see also 1851 line	-	-
1854	PTPN11	NM_002834.3	381	agcagctctctctctctctctct	193079	539314	-	-	-

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Accession	Gene	Protein	Function	Enzyme	EC	Ref
1882	PTPRO	1882	1882	1882	1882	1882
1883	RAD1	1883	1883	1883	1883	1883
1884	RAD1	1884	1884	1884	1884	1884
1885	RAD1	1885	1885	1885	1885	1885
1886	RAD1	1886	1886	1886	1886	1886
1887	PVRL1	1887	1887	1887	1887	1887
1888	PVRL1	1888	1888	1888	1888	1888
1889	PVRL1	1889	1889	1889	1889	1889
1890	PXF	1890	1890	1890	1890	1890
1891	ABCD3	1891	1891	1891	1891	1891
1892	ABCD3	1892	1892	1892	1892	1892
1893	ABCD3	1893	1893	1893	1893	1893
1894	ABCD3	1894	1894	1894	1894	1894
1895	ABCD3	1895	1895	1895	1895	1895
1896	ABCD3	1896	1896	1896	1896	1896
1897	ABCD3	1897	1897	1897	1897	1897
1898	ABCD3	1898	1898	1898	1898	1898
1899	ABCD3	1899	1899	1899	1899	1899
1900	ABCD3	1900	1900	1900	1900	1900
1901	ABCD3	1901	1901	1901	1901	1901
1902	ABCD3	1902	1902	1902	1902	1902
1903	PYCS	1903	1903	1903	1903	1903
1904	PCYT2	1904	1904	1904	1904	1904
1905	PYGL	1905	1905	1905	1905	1905
1906	RAB13	1906	1906	1906	1906	1906
1907	RAB1F	1907	1907	1907	1907	1907
1908	RAB1F	1908	1908	1908	1908	1908
1909	RAB1F	1909	1909	1909	1909	1909
1910	RAD17	1910	1910	1910	1910	1910
1911	RAD17	1911	1911	1911	1911	1911
1912	RAD17	1912	1912	1912	1912	1912
1913	RAD17	1913	1913	1913	1913	1913
1914	RAD23B	1914	1914	1914	1914	1914

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1815	RA023B	NM_002874.2	1189	ggagatgacccctcatttcacaa	1731	669555	see also 1914 line	
1816	RA023B	NM_002874.2	1464	aagctaaagccttccttgattcc	19739	669860	see also 1914 line	
1817	RA051	NM_002875.2	541	ggcgttcagatcacacagatc	17460	451788		breast cancer(乳癌)
1818	RA051	NM_002875.2	899	taagatgcagcctctattatag	17472	451801	see also 1917 line	
1819	RA052	NM_002875.2	312	ggatcctcagcctctctctctag	37342	670038		-
1820	RA052	NM_002875.2	421	tactctggcgcctctctctct	37343	670041	see also 1919 line	
1921	RAFI	NM_002880.1	657	taagcaaaagctccctctactgt	98840	513140	kinase related	receptor signaling
1922	RAFI	NM_002880.1	1489	caaggaatgagcattcttctcagc	98856	513159	apoptosis	protein
1923	RALB	NM_002881.1	258	ctgcactgcctcattctctatga	110457	520205	signal transduction	RAS small
1924	RASAI	NM_002890.1	1239	ttctcttgggcgcctcagatgaat	297054	681574		monomeric
1925	RASAI	NM_002890.1	1242	ttgttgagcgcctcagatgaatct	297055	681575	see also 1924 line	
1926	RASAI	NM_002890.1	1729	gccaaactgtttcagatgaatag	297079	681592	see also 1924 line	
1927	RASAI	NM_002890.1	2503	ccctctctggcagcctctctataga	297104	681614	see also 1924 line	
1928	RASAI	NM_002890.1	2631	tttaagatgtgaacacacttcta	297108	681620	see also 1924 line	
1929	RASGRF1	NM_002891.3	3664	tcccatattatctcagagatctag	295179	664866	signal transduction	
1930	RB1L1	NM_002895.2	1425	agccagagctctccctatgccttt	300754	539556	cell cycle	
1931	RB1L1	NM_002895.2	1426	gccagagctctccctatgcctttt	300755	539557	transcription regulat	
1932	RB1L1	NM_002895.2	3100	tgcaacacccctctaaagctctta	309604	539712	see also 1930 line	
1933	RB1L4	NM_002896.1	604	ggcagcagcctctaaagctctta	54059	698595		
1934	RB1L4	NM_002896.1	702	ggcagcagcctctaaagctctta	54071	698591	see also 1933 line	
1935	RB1L4	NM_002896.1	703	ggcagcagcctctaaagctctta	54072	698592	see also 1933 line	
1936	RBMS1	NM_002897.2	885	aacccaatgtctactcaactctc	19751	475200		
1937	RBMS1	NM_002897.2	1084	agccagcagcagcaacatactgc	19757	475208	see also 1936 line	
1938	RBMS1	NM_002897.2	1231	atgacacattctctatacctttt	19760	475210	see also 1936 line	
1939	RBP3	NM_002900.1	1651	atatacgcagcaacatacctag	173170	585091		retinoid binding
1940	REL	NM_002908.1	1730	attctgaacacccctcattgaat	10411	448078	transcription regulat	p85/c-Rei
1941	RENT1	NM_002911.2	623	ctgcctcgctggtttcttgtaat	54162	513300	or, kinase related	heterodimer
1942	RENT1	NM_002911.2	625	gctcctcgctggtttcttgtaat	54163	513301		helicase
1943	RENT1	NM_002911.2	629	actgctctggtttcttgtaat	54164	513302	see also 1941 line	
1944	RENT1	NM_002911.2	1227	gtggagcagcagcctctaaacaga	54173	513307	see also 1941 line	
1945	RENT1	NM_002911.2	1229	ggagcagcagcctctaaacaga	54174	513308	see also 1941 line	
1946	REV3L	NM_002912.1	831	catatcagcagcagcacttaag	37989	465846		translation release
1947	REV3L	NM_002912.1	881	ctcaatcagcagcagcacttaag	38002	465847		factor codon
1948	REV3L	NM_002912.1	882	ctcaatcagcagcagcacttaag	38004	465848	see also 1946 line	
1949	REV3L	NM_002912.1	1039	gagcagcagcagcagcacttaag	38006	465855	see also 1946 line	
1950	REV3L	NM_002912.1	1174	ctctcaatcagcagcagcacttaag	38008	465860	see also 1946 line	
1951	REV3L	NM_002912.1	2162	atggagcagcagcagcagcacttaag	38025	465892	see also 1946 line	

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1952	REV3L	NM_002912.1	2269	ccacaagagctcctcacttga	38027	465995	see also 1946 line		
1953	REV3L	NM_002912.1	2461	ctctccatccctgaacacaga	38065	465941	see also 1946 line		
1954	REV3L	NM_002912.1	3673	gaactccctccacacacatcc	38070	465944	see also 1948 line		
1955	REV3L	NM_002912.1	8547	gaagacacccctcagttacttc	38240	466103	see also 1946 line		
1956	REV3L	NM_002912.1	8549	gaagacacccctcagttacttc	38241	466104	see also 1946 line		
1957	REV3L	NM_002912.1	9237	agctcattataacagatgctc	38271	466123	see also 1946 line	translation	
1958	RF01	NM_002913.3	782	gaagcagctgctcagagctgag	38321	465706			
1959	RF01	NM_002913.3	1289	gcgcacattatcaacagctctac	38336	465716	see also 1958 line		
1960	RF01	NM_002913.3	1290	gcgcacattatcaacagctctac	38337	465717	see also 1958 line		
1961	RF01	NM_002913.3	1413	asfctcattatcaacagctctac	38344	465721	see also 1958 line		
1962	RF01	NM_002913.3	2517	ccctccctcactcattataaat	38366	465759	see also 1958 line		
1963	RF04	NM_002916.3	764	aactatgctcagtcgataatgta	38459	466173			
1964	RF03	NM_002919.2	518	atggagcattccgcacacacag	474	466210	transcription_regulat		
1965	RF03	NM_002919.2	795	agcgttgctgacgctcaaaagt	482	466218	or		
1966	RF03	NM_002919.2	1333	ctgcagagctgactactcttga	490	466227	see also 1964 line		
1967	RF03	NM_002919.2	1341	tggtacacacttgagatataca	491	466228	see also 1964 line		
1968	RF03	NM_002919.2	1762	accaagctccctcacttaattgc	508	466236	see also 1964 line		
1969	RF03	NM_002919.2	1964	gcctagaacacactcttaaatgc	509	466238	see also 1964 line		
1970	RG513	NM_002927.3	470	ctgtagctgctgctgaacaccta	254977	638731	signal transduction		
1971	RIT2	NM_002930.1	219	agcagctgcacagctacacag	110751	520337	signal transduction		
1972	RNF4	NM_002938.2	884	acggtatccacccacttatata	10712	669302	transcription_regulat		
1973	RNF4	NM_002938.2	886	cgctaccccccacttatata	10713	669303	zinc binding		
1974	ABO1	NM_002940.1	702	gacacagcctgctcgtcagc	71004	492774		ribonuclease inhibitor	
1975	ROB01	NM_002941.2	901	gaactgctccacactcagttatga	245878	701979	receptor activity		
1976	ROB01	NM_002941.2	920	atgaatcccgagctgctatgcc	245880	701980	see also 1975 line		
1977	ROB01	NM_002941.2	1161	agagagctcagactcactcttc	245880	701982	see also 1975 line		
1978	ROB01	NM_002941.2	3058	aacacacacactgatacaacaca	245849	708489	see also 1975 line		
1979	ROB01	NM_002941.2	3094	ctcctctgcacactcttttttg	245952	708489	see also 1975 line		
1980	ROB01	NM_002941.2	3113	atgttatgttgaactctgtatcac	245953	708050	see also 1975 line		
1981	ROB01	NM_002941.2	3114	tggtgtgtgtgactcctgataca	245954	708051	see also 1975 line		
1982	ROB01	NM_002941.2	3153	aactcctatgcacacactctga	245955	708054	see also 1975 line		
1983	ROB01	NM_002941.2	3179	atgggctgttttgaactcctca	245957	708056	transcription_regulat		
1984	RORA	NM_002943.2	560	gtctcgtctcagaagactcttgc	10721	448119	receptor activity,		
1985	RORA	NM_002943.2	1245	tgccacacacttgatgatttta	10740	448127	see also 1984 line		
1986	ROS1	NM_002944.2	865	tggtcctcttttttggttataact	99507	513822	transmembrane receptor protein kinase, related,		CNS Tumours (中枢神経腫瘍)
1987	ROS1	NM_002944.2	2461	gtgctgggtcactctctcact	99556	513861	signal transduction		tyrosine kinase
1988	ROS1	NM_002944.2	4173	atcaattgctctgaattgacct	99609	513808	see also 1988 line		tyrosine kinase

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1989	RPA1	NM_002945.2	1256	atccagagccctaatgaactctgc	19800	451214	-	single-stranded DNA binding	-
1990	RPA2	NM_002946.3	532	gaagaagctcaacacaaatgtc	19822	486072	-	single-stranded DNA binding	-
1991	RPA2	NM_002946.3	533	aagctccacacacacattgtta	19823	486073	see also 1990 line		
1992	RPA2	NM_002946.3	536	aggctccacacacattgtttac	19824	486074	see also 1990 line		
1993	RPN2	NM_002951.2	1904	ccgctgctgcataacattcact	211315	708864	-	dolichyl- diphospho- oligosaccharide- protein	-
1994	RSN	NM_002956.2	3738	ctcataataactcattgttaaaat	85621	486147	-	nucleic acid binding	Hodgkin disease(ホジキン病), Hodgkin's disease(ホジキン病)
1995	RSN	NM_002956.2	4073	ccgacagagagctcagattgaat	85633	486149	see also 1994 line		
1996	SORT1	NM_002959.3	2014	cagaatgtcgaagactattgtt	273022	637914	receptor activity,	protein transporter	-
1997	SORT1	NM_002959.3	2193	acaanaatgagccagaaaattc	273027	637918	see also 1996 line		
1998	ST00A10	NM_002968.1	357	atgcactgactctttttagtc	152361	553385	-	receptor binding	-
1999	SALL1	NM_002968.1	14	agcaaacgaaccccaacatttc	38807	466848	transcription regulat	transcription factor	Towms-Brooks syndrome(タウンス・ブロックス症 候群)
2000	SALL1	NM_002968.1	19	gcgaagctcaacatttccaatc	38808	466843	see also 1999 line		
2001	SALL1	NM_002968.1	325	acactgcagcccttttcaaca	38814	466856	see also 1999 line		
2002	SALL1	NM_002968.1	500	ccagctccagcccttcacacac	38815	466857	see also 1999 line		
2003	SALL1	NM_002968.1	3039	ccagctccagcccttcacacac	38846	466893	see also 1999 line		
2004	SALL1	NM_002968.1	3593	ccagctccagcccttcacacac	38855	466701	see also 1999 line		
2005	SCA2	NM_002973.1	376	tcctcctcagccctttttagtc	46703	471317	-	glnocerebellar ataxia(小脳小室失調)	
2006	SCA2	NM_002973.1	377	ccctcctcagccctttttagtc	46704	471318	see also 2005 line		
2007	SCA2	NM_002973.1	2939	ctccgcacacaccttctctacc	46746	471359	see also 2005 line		
2008	SCA2	NM_002973.1	3096	acctttaccacaccttctctacc	46753	471362	see also 2005 line		
2009	SCA2	NM_002973.1	3489	atgtatgcttcccaatttacc	46765	471368	see also 2005 line		
2010	SCA2	NM_002973.1	3477	atgtcccaatttccctccacac	46766	471371	see also 2005 line		
2011	SCA2	NM_002973.1	3479	gtcccaatttccctccacacac	46767	471372	see also 2005 line		
2012	SCA2	NM_002973.1	3944	ccatgcacacaccttctctacc	46772	471379	see also 2005 line		
2013	SCA2	NM_002973.1	3947	atgcgcacacaccttctctacc	46773	471380	see also 2005 line		
2014	SDC4	NM_002999.2	885	tggcgaataaacacacttcaaac	121078	525392	-	molecular function	unknown
2015	SEC14L1	NM_003003.1	1681	ttctcatttatctcagaaatgac	180957	656739	-	transporter	-
2016	MAP2K4	NM_003010.2	1196	agcttcacatctctatttttaaa	88977	506797	kinase related,	protein tyrosine	breast cancer(乳癌), pancreatic cancer(膵臓癌)
2017	MAP2K4	NM_003010.2	1198	gtctcactctctctttttaaatt	88978	506798	signal transduction	kinase	
2018	SFRP4	NM_003014.2	560	gcgaacccctcagatgattctac	246643	633820	see also 2016 line	receptor activity,	-
2019	SFRP4	NM_003014.2	817	actcactagctattttttatgac	246654	633927	see also 2018 line	signal transduction	-

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2020	SFFP5	NM_030015.2	1025	baaccctggcagacagaagaataa	246667	633946	receptor_activity, apoptosis, signal transduction	-	-
2021	SH3BGR	NM_030020.1	82	tgatccctgctctattctgcatc	252794	709659	-	SH3/SH2 adaptor protein	-
2022	SH3BGR	NM_030022.1	252	agcacaacaagaattgattgaag	252799	709663	see also 2021 line	-	-
2023	SH3BGR	NM_030022.1	162	atcggaattgattgagaaataa	252800	709664	see also 2021 line	-	-
2024	ITSN1	NM_030024.1	878	cagcttgcttcataatggaatct	146829	535968	-	molecular function	-
2025	ITSN1	NM_030024.1	881	ctgcttccaattgaagatcttc	146830	535969	see also 2024 line	-	-
2026	ITSN1	NM_030024.1	996	ctctctgctctcagaatacat	146832	535973	see also 2024 line	-	-
2027	ITSN1	NM_030024.1	3155	gacagaagaattgaaccttcca	146872	535992	see also 2024 line	-	-
2028	ITSN1	NM_030024.1	3247	cgaatctctccctcaactatg	146875	535995	see also 2024 line	-	-
2029	SH3GL3	NM_030027.2	1380	ctctctgctctctatgtaact	317865	540441	signal transduction	-	-
2030	SH3GL3	NM_030027.2	1444	gcacattaaataaacaatca	317866	540443	see also 2029 line	-	-
2031	SHC1	NM_030029.3	197	ggcacaaggagcttctcantaag	253028	540449	kinase related, receptor activity	-	-
2032	SHOX2	NM_030300.2	230	gaagacaagtgcagacaattcca	11199	448383	transcription_regulat	-	-
2033	SHOX2	NM_030300.2	475	atgcaacagcttgccttttaaga	11205	448391	see also 2032 line	-	-
2034	SIL	NM_030035.1	561	acacacagacttctctttatgcca	309387	698744	-	-	-
2035	SIL	NM_030035.1	1615	cagctgagcagaagaattctcag	309421	698748	see also 2034 line	-	-
2036	SLC5A2	NM_030041.1	696	ttggatgctctgcacaataacc	256130	656944	-	sugar porter	renal glycosuria(腎性糖尿例)
2037	SLC5A2	NM_030041.1	701	aggtctcttcacaataactcgg	256131	656945	see also 2036 line	-	-
2038	SLC6A6	NM_030043.1	1013	ctgaacagctgacacagtttgt	255683	640155	-	taurine:sodium symporter	-
2039	SLC6A6	NM_030043.1	1032	ttgtctgctgctgcacattttt	255684	640156	see also 2038 line	-	-
2040	SLC6A6	NM_030043.1	1038	ctgctgtgcacatttttccatc	255696	640157	see also 2038 line	-	-
2041	SLC6A6	NM_030043.1	1280	ttctctgaagaaggtatctctcg	255704	640162	see also 2038 line	-	-
2042	SLC6A6	NM_030043.1	1291	ggattctctggaagaattctcca	255705	640164	see also 2038 line	-	-
2043	SLC6A6	NM_030043.1	1360	gacggaagctggcattatgtgt	255706	640166	see also 2038 line	-	-
2044	SLC6A6	NM_030043.1	1427	ttggttgatcttttgatgtgt	255707	640167	see also 2038 line	-	-
2045	SLC6A6	NM_030043.1	1596	acctaaccttgactacacacaaa	255709	640172	see also 2038 line	-	-
2046	SLC6A12	NM_030044.2	694	gggcacaattgacacaacagatgg	255933	639637	-	betaine/GABA:sodi um symporter	-
2047	SLC18A1	NM_030053.1	1334	ttgtctgtgtgcacaacagatg	271976	656836	-	noncarnine transporter	-
2048	SLC18A2	NM_030054.1	523	aacacaaattgctatccatctcc	271986	775219	-	noncarnine transporter	-
2049	SLC18A2	NM_030054.1	1376	ctgctgtgtgctgctgcaaaag	272002	775232	see also 2048 line	-	-
2050	SLC18A2	NM_030054.1	1377	tgctgtgctgctgctgcaaaag	272003	775233	see also 2048 line	-	-
2051	SLC18A2	NM_030054.1	1420	agacaaattgctgctgcaaaag	272005	775235	see also 2048 line	-	-
2052	SLC18A2	NM_030054.1	1422	gcacattattggagataattgata	272006	775236	see also 2048 line	-	-

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2086	SON	NM_003103.5	2907	tgatcatcagcgccttctatgatg	40387	467661	apoptosis	-	-
2087	SON	NM_003103.5	2911	atctatgccttctctatgatgatg	40389	467662	see also 2086 line	-	-
2088	SON	NM_003103.5	6086	tgzmbaagcctcaacttacttga	40460	467744	see also 2086 line	-	-
2089	SON	NM_003103.5	6345	ctctatgccttctcaactctatg	40468	467751	see also 2086 line	-	-
2090	SON	NM_003103.5	6466	tgatctcaactctgaaaataag	40471	467756	see also 2086 line	-	-
2091	SOX11	NM_003108.3	184	gaagcctctgcgcgcctccatcagc	40575	467901	transcription_regulat	DNA binding	-
2092	SP2	NM_003110.3	1024	gaaccctacatctctgaagctcaaca	40751	741963	transcription_regulat	transcription	-
2093	SP4	NM_003112.2	475	tgaaaacactcttgacacactcttg	40785	468091	transcription_regulat	regulator	-
2094	SP4	NM_003112.2	922	tggtacctgagctcagctcgtgaa	40796	468103	see also 2093 line	-	-
2095	SP4	NM_003112.2	1729	tggtgcccacataactcttgata	40811	468128	see also 2093 line	-	-
2096	SP4	NM_003112.2	1731	gtgcccataactcttgatctact	40812	468121	see also 2093 line	-	-
2097	SPARC	NM_003118.1	365	cccccaatgcgcagcttgtagaag	127203	554215	-	collagen binding	hepatocellular carcinoma(肝癌), esophageal cancer(食道癌), ovarian cancer(卵巢性卵巢癌), prostate cancer(前列腺癌)
2098	SPARC	NM_003118.1	366	ccccattgcgcagcttgtagaag	127204	554216	see also 2097 line	-	-
2099	SPTA1	NM_003126.1	6857	acgtctatgcctctgatatcaaa	114806	524051	-	structural	pyrophosphorylation(磷酸化), spherocytosis(球形红细胞症), elliptocytosis(椭圆形红细胞症)
2100	SPTA1	NM_003126.1	6858	cgctctatgcctctgatatcaaa	114807	524052	see also 2099 line	-	-
2101	SPTB1	NM_003128.1	875	ggtaaccacatctcaacacttca	119251	524153	-	-	-
2102	SPTB1	NM_003128.1	879	ggtaaccacatctcaacacttca	119252	524154	see also 2101 line	-	-
2103	SPTB1	NM_003128.1	881	ccccattgcacacttcaacttca	119264	524155	see also 2101 line	-	-
2104	SPTB1	NM_003128.1	1807	ccccatgcacacttcaacttca	119274	524171	see also 2101 line	-	-
2105	SPTB1	NM_003128.1	1809	ccccatgcacacttcaacttca	119275	524172	see also 2101 line	-	-
2106	SPTB1	NM_003128.1	1810	ccccatgcacacttcaacttca	119276	524173	see also 2101 line	-	-
2107	SPTB1	NM_003128.1	1988	ccccatgcacacttcaacttca	119278	524175	see also 2101 line	-	-
2108	SPTB1	NM_003128.1	3168	ccccatgcacacttcaacttca	119279	524176	see also 2101 line	-	-
2109	SPTB1	NM_003128.1	3169	ccccatgcacacttcaacttca	119280	524177	see also 2101 line	-	-
2110	SPTB1	NM_003128.1	3194	ccccatgcacacttcaacttca	119281	524178	see also 2101 line	-	-
2111	SPTB1	NM_003128.1	6933	ccccatgcacacttcaacttca	119345	790413	see also 2101 line	-	-
2112	SPTB1	NM_003128.1	7093	ccccatgcacacttcaacttca	119351	790419	see also 2101 line	-	-
2113	SRF	NM_003131.1	847	ggatgaagcctgcacatctgaaga	11923	448692	transcription_regulat	transcription	-
2114	SRF	NM_003131.1	848	ggatgaagcctgcacatctgaaga	11924	448693	see also 2113 line	-	-
2115	SRP19	NM_003135.1	107	ggatgaagcctgcacatctgaaga	49473	472570	-	7S RNA binding	-
2116	SRP54	NM_003136.2	1043	tgatgaagcctgcacatctgaaga	54866	703498	-	kinase related,	-
2117	SRPK1	NM_003137.2	204	aggttctatctctgaaacttga	101236	515319	cell cycle	-	-
2118	SRPK1	NM_003137.2	436	aggttctatctctgaaacttga	101247	515325	see also 2117 line	-	-
2119	SRPK1	NM_003137.2	835	aggttctatctctgaaacttga	101250	515335	see also 2117 line	-	-

2120	SRPR	NM_003139.2	1085	tgctgatacatctatctgaag	110919	518061	receptor activity	signal recognition	
2121	SRPR	NM_003139.2	1086	gcctgatacatctctgctgaaga	110920	518062	see also 2120 line	particle receptor	-
2122	SRPR	NM_003139.2	1397	tccctatgctccctgctgataca	110928	518084	see also 2120 line		
2123	SRPR	NM_003139.2	1649	ctgcctctgccaactcattact	110931	518085	see also 2120 line		
2124	SSB	NM_003142.2	158	ctgctcatcaattgatgatatt	48014	475688	transcription_regulat or	tRNA binding	-
2125	SSR1	NM_003144.2	644	aagattggaacgcgaactgatttc	153226	720448	-	signal sequence receptor	-
2126	SSR2	NM_003145.2	451	tgctctcaagcggagattgcaagc	177247	716472	-	signal sequence receptor	-
2127	SSRP1	NM_003146.2	945	tggcaagaacctttgactacaaga	41220	468382	transcription_regulat or	DNA binding	-
2128	STAT4	NM_003151.2	2112	gtgagatctccatctgtataaac	12196	448944	transcription_regulat or	translational regulator	-
2129	STIM1	NM_003156.2	840	agaagaagccctcaattccactca	136457	540079	cell cycle	protein binding	-
2130	STIM1	NM_003156.2	1207	tgcctatgctctcatctgatt	136460	540683	see also 2129 line		
2131	STIM1	NM_003156.2	1209	ctatgctctcatctgattgag	136461	540684	see also 2129 line		
2132	STIM1	NM_003156.2	1212	gtgtctctcatctgattgatt	136462	540685	see also 2129 line		
2133	STIM1	NM_003156.2	1241	ctctgatttgcctatctatcaga	136463	540687	see also 2129 line		
2134	RPS6KB1	NM_003161.1	317	tgtctaaagaggagctctgaaag	99950	498697	kinase related	protein serine/threonine kinase	-
2135	STRN	NM_003162.1	1030	gaagcccaatggtccaacacac	122837	527387	signal transduction	calmodulin binding	-
2136	STRN	NM_003162.1	1031	agccctcaatggtccaacacac	122838	527388	see also 2135 line		
2137	STRN	NM_003162.1	2179	agccctcaatggtccaacacac	122839	527422	see also 2135 line		
2138	STX5A	NM_003164.2	492	acgcacgaagccctctcttctgag	270976	652750	-	protein transporter	-
2139	STX5A	NM_003164.2	561	atcaatgacctccaacaacaat	270990	652755	see also 2138 line		
2140	STX5A	NM_003164.2	683	agctctatgctccaatgacttcc	270981	652759	see also 2138 line		
2141	SUPT6H	NM_003169.2	614	aactggcggatctatctctgaag	12289	658128	transcription_regulat or, cell cycle	transcription elongation factor	-
2142	SUPT6H	NM_003170.2	739	ttcgtgttggtctcttctctatc	12321	475733	-	-	-
2143	SUPT6H	NM_003170.2	1325	acctaacccgcctcttggagaag	12331	475742	see also 2142 line		
2144	SUPT6H	NM_003170.2	3161	ttcccaagctctctgattgtg	12362	475771	see also 2142 line		
2145	SUPT6H	NM_003170.2	4046	agcagcagcagccaccatcacatc	12381	475799	see also 2142 line		
2146	SUPT6H	NM_003170.2	4284	ctgctgacacagcagtgagcttc	12385	475811	see also 2142 line		
2147	SUPT6H	NM_003170.2	4421	agaagctctctctcaaaactcaag	12389	475817	see also 2142 line		
2148	SUPT6H	NM_003170.2	4527	gggttaaccagcatgataatgatac	12391	475819	see also 2142 line		
2149	SUPV3L1	NM_003171.2	539	tctttagagcatgccaacaacat	54973	486463	-	-	-
2150	SUPV3L1	NM_003171.2	562	agatctatcctctaaataactgt	54975	486471	see also 2149 line		
2151	SUPV3L1	NM_003171.2	1332	ttagcctaagaagaattgatttt	55005	486490	see also 2149 line		
2152	SUPV3L1	NM_003171.2	1640	cttccctcatctcatgatttttt	55014	486496	see also 2149 line		
2153	SUPV3L1	NM_003171.2	1697	ttcgcataatgagatgattttta	55018	486501	see also 2149 line		
2154	SUPV3L1	NM_003171.2	1972	ttctctatgactcactgatttagg	55028	486512	see also 2149 line		

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2189	THOP1	NM_003249.3	1159	ggacacatcctctctctctaac	160014	559690	receptor activity, transcription_regulat	zinc binding	—
2190	THRA	NM_003250.4	1121	agactctacagcaggtttacaaag	13328	449537	thyroid hormone receptor	—	—
2191	THRA	NM_003250.4	1122	agctctctcagcaggtttacaaag	13329	449538	see also 2190 line	—	—
2192	THRA	NM_003250.4	1126	caagctctctcagcaggtttacaaag	13330	449539	see also 2190 line	—	—
2193	THRA	NM_003250.4	1138	caagctctctcagcaggtttacaaag	13333	449541	see also 2190 line	—	—
2194	THRA	NM_003250.4	1143	caagctctctcagcaggtttacaaag	13334	449542	see also 2190 line	—	—
2195	THAL	NM_003252.2	180	agacatcagccatctctcttttg	41952	475866	transcription_regulat	—	—
2196	THAL	NM_003252.2	606	caacacagcaggtttacaaag	41957	475878	or, apoptosis	—	—
2197	THAL	NM_003252.2	867	gggttaaaacatctctctctatga	41965	475887	see also 2195 line	—	—
2198	TIMP2	NM_003255.2	400	accctcaacagcagctttttgaat	293876	663642	metalloendopeptidase inhibitor	hepatocellular carcinoma(肝臓), chondrosarcoma(軟骨肉腫), bladder cancer(膀胱癌), breast cancer(乳癌), lung cancer(肺癌),	—
2199	TIMP2	NM_003255.2	402	cctcaacagcagctttttgaatg	293877	663644	see also 2198 line	—	—
2200	TIMP4	NM_003256.1	271	tcaggtatcaactcaacacagata	293885	663671	metalloendopeptidase inhibitor	—	—
2201	TJP1	NM_003257.2	598	acagatcaactcattctctctgaa	331305	541229	—	—	—
2202	TJP1	NM_003257.2	690	ataccagcttgcacatgtaaac	331310	541235	see also 2201 line	—	—
2203	TJP1	NM_003257.2	1173	atctactctcagaacaaatg	331325	541240	see also 2201 line	—	—
2204	TJP1	NM_003257.2	2865	agacagctatctctcagatga	331381	541303	see also 2201 line	—	—
2205	TJP1	NM_003257.2	2868	acagagctatctctcagatga	331382	541304	see also 2201 line	—	—
2206	TJP1	NM_003257.2	3076	acagagctatctctcagatga	331389	541309	see also 2201 line	—	—
2207	TJP1	NM_003257.2	3745	gcttcaactctctcagatga	331412	541327	see also 2201 line	—	—
2208	TJP1	NM_003257.2	4556	gcttcaactctctcagatga	331430	541346	see also 2201 line	—	—
2209	ICAM5	NM_003258.2	1758	gttgcgcagcaggtttacaaag	317988	682884	—	—	—
2210	TLOC1	NM_003262.2	654	tctgcaacatctcaagaaagaga	271117	650009	receptor activity	—	—
2211	TLOC1	NM_003262.2	696	tctgcaacatctcaagaaagaga	271119	650012	see also 2210 line	—	—
2212	TLOC1	NM_003262.2	890	gagctcaacagctcaagaaag	271128	650017	see also 2210 line	—	—
2213	TLOC1	NM_003262.2	1272	gagctcaacagctcaagaaag	271130	650024	see also 2210 line	—	—
2214	TLR1	NM_003263.2	651	tgtatgctctctctatgcaaa	123487	527927	receptor activity, kinase related	tricylated lipoprotein binding	—
2215	NR2E1	NM_003269.2	722	cggtacacacagccgctatttag	8423	447146	transcription_regulat	—	—
2216	NR2E1	NM_003269.2	728	aaacagccgctctggtatctctc	8424	447148	or,	—	—
2217	NR2E1	NM_003269.2	1215	gtgaatggagccacaaatgctct	8430	447157	see also 2215 line	—	—
2218	THAS6	NM_003270.2	438	tgttttcagatcagatgataag	312818	693423	kinase related	—	—
2219	TNRC1	NM_003280.1	325	ctctctcctcgtctctcagaaac	154066	554698	—	calcium ion binding	—
2220	TNR	NM_003285.1	1131	gcaatcagcagatctctctatct	289224	678022	—	—	—
2221	TNR	NM_003285.1	2060	gcaatcagcagatctctctatct	289241	678033	see also 2220 line	—	—
2222	TOP1	NM_003286.2	285	acagatcagcttgcagatgct	42443	469396	translation	testicular cancer(睾丸癌)	—
2223	TOP1	NM_003286.2	286	gagcttctcagcagatgct	42444	469397	see also 2222 line	—	—
2224	TOP1	NM_003286.2	674	atgctcctctctatgcaaaag	42454	469400	see also 2222 line	—	—

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2225	TRP2	177	ccagcgcacagcagcttccactga	183221	576952	-	tripeptidyl-	-
2226	TRP2	1496	agcttcacacatgagatattt	182465	576957	see also 2225 line	peptidase II	-
2227	TPR	3459	agacacacatgacagcagcagc	302248	690067	-	-	papillary Thyroid Carcinomas (副甲状腺腫瘍)
2228	TPR	6286	ggagctacacagcagcagcagc	302501	690080	see also 2227 line	-	-
2229	NR2C1	1635	aagctctatgaggatctcaaga	8358	447139	-	steroid hormone	-
2230	TRAF1	2325	aagafgctgcctcagctgttga	102866	516722	transcription, regulat	receptor	-
2231	TRAF3	917	aagcgcctgctgcgtttttca	160069	559721	apoptosis,	heat shock protein	-
2232	TRHR	578	tactactcacttacttactact	239032	629222	gpor,	-	-
2233	TRPC1	297	gcctgcgcagcagcttactacta	261645	645305	signal transduction	thyrotropin-	-
2234	TRPC1	307	aggctgcctactatttggttaa	261646	645309	receptor activity,	releasing hormone	-
2235	TRPC1	401	taccataactattgaacagaa	261652	645312	signal transduction	receptor	-
2236	TRPC1	530	arctctcctcctcacaactatg	261658	645328	channel	store-operated	-
2237	TRPC1	1068	aagcccccctgaagaagatbat	261676	645352	see also 2233 line	calcium channel	-
2238	TRPC1	2036	atgctcttaactcttctttgaca	261708	645377	see also 2233 line	-	-
2239	TRPC1	2335	ctgcgcacagctctcacaact	261720	645384	see also 2233 line	-	-
2240	TRPC1	2326	tgcgcacagctctcacaact	261721	645385	see also 2233 line	-	-
2241	TRPC1	2317	tgcgcacagctctcacaact	261724	645386	see also 2233 line	-	-
2242	TRPC1	2378	tgcgcacagctctcacaact	261725	645387	see also 2233 line	-	-
2243	TRPC3	2382	aactatgagctgtttttactca	261754	645412	channel	store-operated	-
2244	TRPC3	2858	tccagctcctcctgtaacattt	261767	645431	see also 2243 line	calcium channel	-
2245	TRPC3	2860	cagcctcctcctgtaacattt	261768	645432	see also 2243 line	-	-
2246	ITC1	730	aagcttgctgagcttactaaag	136954	748273	-	protein binding	-
2247	DNAJC7	644	aagcttgctgagcttactaaag	130761	709268	-	protein binding	-
2248	DNAJC7	892	atgagctgcagcttactaaag	130763	709295	see also 2247 line	-	-
2249	DNAJC7	1354	tactatgaagaaggctatgatg	130768	709306	see also 2247 line	-	-
2250	TTN	242	acgttttcagccgcttacaag	103689	791084	kinase, related,	-	cardiomyopathy/アルゴール性心筋症, tardive
2251	TTN	278	aaggtgagctacacacacttca	103870	791085	receptor activity	-	tbial muscular dystrophy/運動性筋萎縮症/ストロ
2252	TTN	378	cgcgcttcagatcctcctttag	103872	791088	see also 2250 line	-	-
2253	TUFM	446	gggtcatgcagatctatga	57807	477196	-	translation	-
2254	TULP1	1140	acgcttcagcttcttgcacac	314030	622760	elongation factor	-	retinitis pigmentosa (色素性網膜炎)
2255	HIRA	658	agcctcatgcagcggtgataca	4815	668985	transcription, regulat	transcription factor	-
2256	TYK2	3015	tccacaagcgttattgaataa	107139	517327	or	non-membrane	-
						kinase related	spinning protein	-
							tyrosine kinase	-

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2257	UBE2B	NM_003337.2	570	tccttttaacacagatcatgaat	231083	616570	-	ubiquitin-protein ligase	-
2258	UBE2D1	NM_003338.3	575	cccttgaccagagatgatgcaca	231111	756338	-	ubiquitin-protein ligase	-
2259	UBE2G1	NM_003342.3	532	tgcgcctgggtgaagaagaacg	231154	616623	-	ligase	-
2260	UCN	NM_003355.2	451	ccagacgaagaccgcctcatatc	169559	710954	signal transduction	neuropeptide	-
2261	UCP2	NM_003355.2	1018	acctccctgcacactccactctct	181506	574554	-	hormone	-
2262	UCP2	NM_003355.2	1090	tggtaagaagagatcactgaac	181507	574556	see also 2261 line	uncoupling protein	obesity (肥満)
2263	UGG	NM_003358.1	562	atgtccatccacattgttgtatgt	211927	606898	-	transferase, transferring	-
2264	UGGG	NM_003358.1	833	tgcacacttcagacagatgatatt	211932	605711	see also 2263 line	glycosyl groups	-
2265	UGGG	NM_003358.1	834	gccacctagacagatgatatttt	211933	605712	see also 2263 line	-	-
2266	UGGG	NM_003358.1	1142	tctgtcaacaattatgtgacg	211946	605723	see also 2263 line	-	-
2267	UGDH	NM_003359.1	1320	cacttgatgggaacatgttaagc	220826	607161	-	kinase	-
2268	USP4	NM_003363.2	151	gtccacgtgatctatttttaca	189875	593678	-	ubiquitin-specific	-
2269	USP4	NM_003363.2	693	caaggtcaggtctgtatgtttgc	189891	593692	see also 2268 line	protease	-
2270	USP4	NM_003363.2	685	ggctcaggtgcagatcttgacg	189892	593693	see also 2268 line	-	-
2271	UQORC2	NM_003366.1	518	gcctcagctcaagatgtgacaag	184908	579161	-	ubiquitin- c reductase	-
2272	USP2	NM_003367.1	481	gtcagcggagagacagctgttcg	139882	702828	transcription, regulat or	USP43/USP44 complex	breast cancer (乳癌)
2273	UVRAG	NM_003368.2	327	ccgcagacactgttatagaact	322286	802214	-	-	-
2274	UVRAG	NM_003368.2	739	tgcgaattctacagctgtctct	322286	802226	see also 2273 line	-	-
2275	VBP1	NM_003372.3	434	aagtcagatctcctgaattaaa	132701	542220	-	protein binding	-
2276	VBP1	NM_003372.3	730	gtcaatatgcgcaggtttataa	137020	542232	see also 2275 line	-	-
2277	VEGF	NM_003376.3	1577	aagatccacgaacgttttaattgt	168110	596274	signal transduction	vascular endothelial growth factor receptor ligand	bladder transitional cell carcinoma (膀胱移行上皮 癌), rheumatoid arthritis (関節リウマチ), colorectal cancer (大腸癌), bladder cancer (膀胱 癌), neuroblastoma (神経芽細胞腫), prostate cancer (前立腺癌), colorectal cancer (結腸直腸 癌), astrocyte tumors (星状細胞腫)
2278	VEGF	NM_003376.3	1580	atccacacacatcaattttcttc	168111	596275	cell cycle	-	-
2279	VEGF	NM_003376.3	1827	aagcagacaccttgatttttaa	168112	596277	see also 2277 line	-	-
2280	VRK1	NM_003384.1	516	aaggtttcttcgagacacgtctct	107469	517515	see also 2277 line	-	-
2281	VRK1	NM_003384.1	788	ccatctttcttcgagacacgtctct	107473	517583	kinase, related	-	-
2282	VRK1	NM_003384.1	789	ccatcttcagatcgttgattttgaa	107476	517394	see also 2280 line	-	-
2283	VSX1	NM_003385.3	712	accagataacactgattgaatc	154394	554848	see also 2280 line	-	-
2284	VSX1	NM_003385.3	749	gagcgccttcctcattgatac	154395	554849	see also 2283 line	-	-
2285	VSX1	NM_003385.3	750	agcagcccttcctcattgatac	154396	554850	see also 2283 line	-	-
2286	WASPp	NM_003387.3	438	cgggcaacagagatgatcttct	120135	876041	-	-	-

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2287	WEE1	NM_003390.2	2401	gtcttggttcacatgcataa	107834	517727	cell cycle	kinase related,	protein tyrosine	—
2288	WEE1	NM_003390.2	2405	ttcttcaactgataaacaac	107635	517728	see also 2287 line	kinase	—	—
2289	WEE1	NM_003390.2	3028	atctctactctttgagaagaac	107655	517749	see also 2287 line	—	—	—
2290	WNT1B8	NM_003393.2	273	tctccagatggttttgaaat	255530	639768	signal transduction	signal transducer	—	—
2291	WNT1B8	NM_003393.2	274	ccccaactctctcttgaaagc	255531	639737	see also 2290 line	—	—	—
2292	WNT1B8	NM_003393.2	275	ccccaagtgatgagaagaagc	255532	639738	see also 2290 line	—	—	—
2293	WNT1B8	NM_003394.2	417	gtctgtctctgacatgagatt	235414	639560	signal transduction	signal transducer	—	—
2294	XP01	NM_003400.2	41	gtctgtctctgacatgagatt	271534	750091	—	—	—	—
2295	XP01	NM_003400.2	84	gtctgtctctgacatgagatt	271536	750092	see also 2294 line	—	—	—
2296	XP01	NM_003400.2	129	gtctgtctctgacatgagatt	271537	750096	see also 2294 line	—	—	—
2297	XP01	NM_003400.2	384	gtctgtctctgacatgagatt	271547	750105	see also 2294 line	—	—	—
2298	XP01	NM_003400.2	386	gtctgtctctgacatgagatt	271548	750106	see also 2294 line	—	—	—
2299	XP01	NM_003400.2	469	gtctgtctctgacatgagatt	271552	750108	see also 2294 line	—	—	—
2300	XP01	NM_003400.2	2428	gtctgtctctgacatgagatt	271615	750180	see also 2294 line	—	—	—
2301	XP01	NM_003400.2	2486	gtctgtctctgacatgagatt	271624	750185	see also 2294 line	—	—	—
2302	XP01	NM_003400.2	2855	gtctgtctctgacatgagatt	271642	750195	see also 2294 line	—	—	—
2303	XP01	NM_003400.2	3011	gtctgtctctgacatgagatt	271647	750197	see also 2294 line	transcription_regulat	—	—
2304	YY1	NM_003403.3	486	ctctgtgtgacacccctcacatg	13962	449865	or	zinc binding	—	—
2305	YY1	NM_003403.3	1376	ctctgtgtgacacccctcacatg	13968	449870	see also 2304 line	transcription_regulat	—	—
2306	ZIC1	NM_003412.2	1431	ccccaagaagctgcacaagaac	331657	450315	or	DNA binding	—	—
2307	ZIC1	NM_003412.2	2026	gtctgtctctctcaatttacc	331666	450320	see also 2306 line	—	—	—
2308	ZIC3	NM_003413.2	1764	ctctgtgtgacacccctcacatg	44007	471080	transcription_regulat	—	—	—
2309	ZIC3	NM_003413.2	1787	tctctcaacacccctcacatg	44009	471081	or	DNA binding	—	—
2310	ZNF9	NM_003418.1	511	gtctgtgtgacacccctcacatg	15678	457929	—	transcription factor	myotonic dystrophy (muscular dystrophy)	—
2311	ZNF9	NM_003418.1	552	gtctgtgtgacacccctcacatg	15680	457932	see also 2310 line	—	—	—
2312	ZNF9	NM_003418.1	558	gtctgtgtgacacccctcacatg	15681	457933	see also 2310 line	—	—	—
2313	ZNF9	NM_003418.1	603	gtctgtgtgacacccctcacatg	15682	457934	see also 2310 line	transcription_regulat	—	—
2314	ZNF76	NM_003427.3	1692	gtctgtgtgacacccctcacatg	45907	776624	or	DNA binding	—	—
2315	ZNF76	NM_003427.3	1695	gtctgtgtgacacccctcacatg	45908	776625	see also 2314 line	transcription_regulat	—	—
2316	ZNF189	NM_003452.2	509	aaccacacaggtgtgagatgata	14753	481820	or	—	—	—
2317	ZNF189	NM_003452.2	516	gggtgtgagatgagatgata	14755	481822	see also 2316 line	—	—	—
2318	ZNF189	NM_003452.2	748	gtctgtgtgacacccctcacatg	14759	481832	see also 2318 line	transcription_regulat	—	—
2319	ZNF198	NM_003453.2	921	gagatgtgaactgtgagatgata	161558	669564	or	—	—	—
2320	ZNF198	NM_003453.2	1887	gtgtgtgtgagatgagatgata	161569	669564	see also 2319 line	—	—	—
2321	ZNF198	NM_003453.2	1962	gtgtgtgtgagatgagatgata	161572	669573	see also 2319 line	—	—	—
2322	ZNF198	NM_003453.2	2167	gtgtgtgtgagatgagatgata	161574	669573	see also 2319 line	—	—	—

stem-cell leukemia (幹細胞性白血病)

[illegible]

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2359	ACOX2	NM_003500.1	612	gccaccaccagagatgttgatataca	224141	612283	-	electron transfer	-
2360	OD07	NM_003503.2	969	gtccacacatctcttttttgagaa	76107	497704	kinase related,	protein	-
2361	OD46L	NM_003504.3	633	tgtctctgagcagcagcagat	301651	670073	cell cycle	serine/threonine kinase	-
2362	OD46L	NM_003504.3	633	gtccacacatctcttttttgagaa	301652	670074	see also 2381 line	-	-
2363	FZD6	NM_003506.2	1682	ctctgaccacgaatgttgatttt	242598	630700	receptor activity,	-	-
2364	NME5	NM_003551.2	891	aggactctcaaacatttgaagc	94873	510398	signal transduction	fizzled receptor	-
2365	PIP5K1B	NM_003556.1	577	cagctcttaccattgaattaaac	207565	597572	kinase related,	nucleoside-diphosphate kinase	-
2366	PIP5K2B	NM_003559.3	707	aagatcaaggtgacacatcatct	207844	597881	kinase related,	-	-
2367	PLA2G6	NM_003560.1	2391	tgtgtctgcacatccactctcaga	199556	591471	signal transduction	calcium-independent cytosolic phospholipase A2	-
2368	PLA2G6	NM_003560.1	2486	gaagccagagctctacatctatga	199559	591472	see also 2367 line	-	-
2369	SLC25A11	NM_003562.3	580	accacacccctgctgcacaaaat	181005	574244	-	oxoglutamate/malate transporter	-
2370	SLC25A11	NM_003562.3	582	cagctctctgctgctgcacaaaat	181006	574245	see also 2369 line	-	-
2371	VAPA	NM_003574.4	385	tgtctctctcaactcttaattg	292711	682451	kinase related	-	-
2372	VAPA	NM_003574.4	1018	aagctgacacatctgataaaccc	292729	682464	see also 2371 line	-	-
2373	STK24	NM_003576.2	291	aggtgttcaaaagcattgtacat	101583	515806	kinase related,	protein tyrosine kinase	-
2374	RAO54L	NM_003578.2	2029	tgtatcatctcagctctctatct	37487	465311	signal transduction	-	-
2375	RAO54L	NM_003578.2	2293	tggccacagctgctcattgaagagc	37477	465319	see also 2374 line	-	-
2376	NSMAF	NM_003580.2	1502	ctgtatgtgtcaacagatttttaa	253666	701638	signal transduction	receptor signaling	-
2377	NSMAF	NM_003580.2	1503	tgtatgtgtcaacagatttttaa	253667	701637	see also 2376 line	-	-
2378	NSMAF	NM_003580.2	1507	tgtgtgtcaacagatttttaaat	253668	701638	see also 2376 line	-	-
2379	DO2B	NM_003585.1	681	aggcgaataagagctcagaacaaa	172619	656488	-	-	-
2380	DHX16	NM_003587.3	2563	caccacgctctgtgtgaagatgtg	59842	483537	cell cycle	RNA helicase	-
2381	QUL4B	NM_003588.2	988	aattttatgtatcaagacatttaa	279003	674956	cell cycle	molecular function	-
2382	QUL4B	NM_003588.2	1478	atatttaacatctatgataaagt	279017	674977	see also 2381 line	unknown	-
2383	QUL3	NM_003590.1	501	tgtcttcaactgtttttcata	306105	674843	-	-	-
2384	QUL3	NM_003590.1	535	agctcttcaactgtttttcata	306107	674844	see also 2383 line	-	-
2385	QUL3	NM_003590.1	1220	tgtctctgctgaacagttttga	306145	674865	see also 2383 line	-	-
2386	QUL3	NM_003590.1	1470	tgtctctgctgaacagttttga	306150	674788	see also 2383 line	-	-
2387	QUL3	NM_003590.1	1595	aaagatttcatgacactctat	306152	674883	see also 2383 line	-	-
2388	QUL3	NM_003590.1	1733	aaagatttcatgacactctat	306158	674886	see also 2383 line	-	-

2389	CUL3	NM_003590.1	2218	tccctacacctgtgaaccacac	306167	674895	see also 2383 line	
2390	CUL3	NM_003590.1	2219	ccctccctctgtgaaccacac	306168	674896	see also 2383 line	
2391	CUL3	NM_003590.1	2525	tacacgctctgtgaaccacac	306181	674901	see also 2383 line	
2392	CUL3	NM_003590.1	2534	gactgtttttgaaccacacac	306182	674903	see also 2383 line	
2393	CUL3	NM_003590.1	2558	aaagatctttttgaaccacac	306184	674904	see also 2383 line	
2394	CUL3	NM_003590.1	2591	caactgtttttgaaccacacac	306185	674906	see also 2383 line	
2395	CUL3	NM_003590.1	2594	cttgagatgtcaaccacacac	306187	674907	see also 2383 line	
2396	CUL3	NM_003590.1	2596	gaagatgtcaaccacacacac	306188	674908	see also 2383 line	
2397	CUL3	NM_003590.1	2597	agagatgtcaaccacacacac	306189	674909	see also 2383 line	
2398	CUL3	NM_003591.2	1082	ggcaataatgaactctctcc	306043	674900	cell cycle,	-
2399	CUL2	NM_003591.2	1892	caagtgaattgaataatgaact	306078	674925	see also 2388 line	
2400	CUL2	NM_003591.2	2074	tactgaacctctgttcagaaac	306085	674932	see also 2388 line	
2401	CUL2	NM_003591.2	2346	tcccaattctcagctgattgaag	306097	674935	see also 2388 line	
2402	CUL1	NM_003592.2	779	tgtgtgtctgcgtgaattgaag	233081	533932	cell cycle,	-
2403	CUL1	NM_003592.2	1006	tgtcaaaagccctacgttaaac	233088	533940	see also 2402 line	
2404	CUL1	NM_003592.2	1014	ggccacacgttaacgttataa	233099	533941	see also 2402 line	
2405	CUL1	NM_003592.2	1110	caaacaccacttaattgaatat	233069	533944	see also 2402 line	
2406	CUL1	NM_003592.2	1228	aaagctctctcttgaacaacac	233099	533948	see also 2402 line	
2407	CUL1	NM_003592.2	1309	ggccacataaactctgtatct	233103	533948	see also 2402 line	
2408	CUL1	NM_003592.2	1339	aaagctctctcttgaacaacac	233104	533951	see also 2402 line	
2409	CUL1	NM_003592.2	1539	aaagctctctcttgaacaacac	233107	533958	see also 2402 line	
2410	CUL1	NM_003592.2	1540	aaagctctctcttgaacaacac	233108	533957	see also 2402 line	
2411	CUL1	NM_003592.2	1541	ggcttgaactctcttgaacaac	233109	533958	see also 2402 line	
2412	CUL1	NM_003592.2	1544	tgtgtgaactctcttgaacaac	233110	533959	see also 2402 line	
2413	CUL1	NM_003592.2	1546	tgtgtgaactctcttgaacaac	233111	533960	see also 2402 line	
2414	TPST1	NM_003596.2	521	atcaaaaagatgactcttaata	217351	605533	protein-tyrosine sulfotransferase	-
2415	TPST1	NM_003596.2	1028	tgtcatgtgtgttcaactgaac	217369	605553	see also 2414 line	
2416	TPST1	NM_003596.2	1061	atctctgaactgtgtatgaaca	217370	605555	see also 2414 line	
2417	OGT	NM_003605.3	263	gaattgacacatgaagatataca	134293	601969	signal transduction	-
2418	OGT	NM_003605.3	4181	tgtgaagagcagcagctttttga	134313	601981	see also 2417 line	
2419	OGT	NM_003605.3	5561	agcaatgaacagctctcttaata	134373	602035	see also 2417 line	
2420	OGT	NM_003605.3	5946	tgtcccaagacaccttcatatttt	134392	602056	see also 2417 line	
2421	OGT	NM_003605.3	6326	caatgtgttgagacatgacagac	134401	602065	see also 2417 line	
2422	RAE1	NM_003610.2	730	tgcagagagcagcagctgct	53849	785562	RNA binding	-
2423	RAE1	NM_003610.2	736	gaagagcagctgattctatcagc	53851	785564	see also 2422 line	
2424	RAE1	NM_003610.2	1096	aacttgagacacatttgctcagc	53867	785574	see also 2422 line	
2425	OFD1	NM_003611.1	381	atgaactctgcacaaagctatac	282704	786124	molecular function	-
2426	SEMA7A	NM_003612.1	546	aactctctgtgtctgttgagag	313517	684674	receptor activity	-
2427	SEMA7A	NM_003612.1	584	ccacatctgcagacagtgatataca	313519	684675	see also 2426 line	
2428	CULP	NM_003613.1	2720	atgagatgacacagtgatataag	198111	783162	phosphatase	-
2429	SIP1	NM_003616.1	186	gacttgacagcgaagtttgatcac	47234	689180	pre-mRNA splicing factor	-

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2430	SIP1	NM_003631.1	856	aactatctcttgatattctga	47244	689193	see also 2429 line	trypsin	mental retardation(精神遅滞)
2431	PRSS12	NM_003631.2	2636	agcattatctcttgatattctga	182532	575884	receptor activity	-	-
2432	PFPIA2	NM_003625.2	1442	gtgcattatcttgatattctga	316313	795821	-	-	-
2433	PFPIA2	NM_003625.2	2008	gtgcattatcttgatattctga	316332	795835	see also 2432 line	-	-
2434	PFPIA2	NM_003625.2	3887	aaagctgacgaattctgatact	316363	795882	see also 2432 line	-	-
2435	PFPIA2	NM_003625.2	3909	tccactgtctgcatactactgac	316364	795883	see also 2432 line	-	-
2436	PFPIA2	NM_003625.2	3913	ctgttcgcatactactactgac	316365	795884	see also 2432 line	-	-
2437	PEX3	NM_003630.1	245	accgaagacttccatattctga	309872	688640	-	-	Zellweger syndrome(ウェルナー症候群)
2438	PEX3	NM_003630.1	285	aaacatgagagcctctaatgac	309873	688641	see also 2437 line	-	-
2439	PEX3	NM_003630.1	545	aaacgaactattctaatgaatt	309884	688645	see also 2437 line	-	-
2440	PEX3	NM_003630.1	1013	gttgacgctctttatctgaatg	309889	688655	see also 2437 line	-	-
2441	PEX3	NM_003630.1	1018	agcgtctcttgatctgaataat	309900	688666	see also 2437 line	-	-
2442	PARG	NM_003631.1	1965	ttgcactctctgcataattat	202212	596060	-	-	-
2443	PARG	NM_003631.1	1968	ctactctctgcataattatgac	202213	596061	see also 2442 line	-	-
2444	PARG	NM_003631.1	2111	atgatacgaattatctgactga	202219	596068	see also 2442 line	-	-
2445	PARG	NM_003631.1	2128	taattacgaacacattactctta	202220	596068	see also 2442 line	-	-
2446	PARG	NM_003631.1	2359	agcattctctgaattgattcttg	202223	596077	see also 2442 line	-	-
2447	PARG	NM_003631.1	2363	actctctctgaattgattgcaaa	202224	596078	see also 2442 line	-	-
2448	PARG	NM_003631.1	2364	tgctaaagagagatttgatgaat	202225	596079	see also 2442 line	-	-
2449	PARG	NM_003631.1	2653	caagctctctctgactgactcttg	202226	596084	see also 2442 line	-	-
2450	PARG	NM_003631.1	2656	acgtctctctctgactgactcttg	202233	596085	see also 2442 line	-	-
2451	ENC1	NM_003633.1	1712	cgattgagctgagcacaacttaag	116951	522569	actin binding	-	Alzheimer disease(アルツハイマー病), Aarskog-Scott syndrome(Aarskog-Scott症候群)
2452	NIPSNAP1	NM_003634.1	1019	ctgattgagaaattgctactctta	331855	697952	-	-	-
2453	NDST2	NM_003635.2	947	taacctatgcctgctatgctcttg	217211	605629	-	heparin N-deacetylase/N-sulfotransferase	-
2454	NDST2	NM_003635.2	1150	aggtactacacagtgatctctct	217214	605636	see also 2453 line	-	-
2455	NDST2	NM_003635.2	1826	tctctggcgaagtctatctatcac	217218	605648	see also 2453 line	-	-
2456	NDST2	NM_003635.2	2836	tacaagcgtctgactactctaac	217242	605684	see also 2453 line	-	-
2457	IKBKX	NM_003639.2	1164	aggccacacagcagctatctacaag	254494	669018	apoptosis, kinase related, transcription regulator	-	-
2458	IKBKAP	NM_003640.2	1637	tccactatgcagctatctgctttt	219429	721263	signal transducer	-	-
2459	HAT1	NM_003642.1	523	aggctacacacagctatctgcttt	131657	721541	kinase related	-	-
2460	HAT1	NM_003642.1	537	aggctacacacagctatctgcttt	131658	721542	protein binding	-	-
2461	HAT1	NM_003642.1	540	aggctacacacagctatctgcttt	131659	721543	see also 2459 line	-	-
2462	HAT1	NM_003642.1	530	aggctacacacagctatctgcttt	131661	721547	see also 2459 line	-	-
2463	HAT1	NM_003642.1	715	taactatgctatctgacacagcttc	131664	721551	see also 2459 line	-	-
2464	HAT1	NM_003642.1	795	tgctacactcttgaacacagcttc	131665	721553	see also 2459 line	-	-
2465	HAT1	NM_003642.1	836	tctctacagcttcttgaacacagcttc	131668	721556	see also 2459 line	-	-
2466	HAT1	NM_003642.1	1017	cctctaaagagcttgaacacagcttc	131678	721564	see also 2459 line	-	-

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2467	DGKZ	NM_003846.1	921	ggccctgagacccttcctc	78230	597987	kinase, related	diacylglycerol	-
2468	DGKZ	NM_003846.1	1513	caaccccttcgaagaatg	78233	598010	see also 2467 line	kinase	-
2469	DGKZ	NM_003846.1	1515	ggcccttcgaagaatg	78234	598011	see also 2467 line	-	-
2470	DGKZ	NM_003846.1	1516	ggcccttcgaagaatg	78235	598012	see also 2467 line	diacylglycerol	-
2471	DGKE	NM_003847.1	674	atcagatgcgaagcaaaaa	78182	595957	kinase, related	kinase	-
2472	GOP-S3	NM_003853.2	448	aggatgagctctcaatcag	331885	703717	-	-	-
2473	GOP-S3	NM_003853.2	610	tggacatctgcgaacaacct	331891	703721	see also 2472 line	-	-
2474	GOP-S3	NM_003853.2	613	ggcccttcgaagaacacctt	331892	703723	see also 2472 line	-	-
2475	GOP-S3	NM_003853.2	741	gtcatctctggaatcat	331899	703727	see also 2472 line	-	-
2476	CBX4	NM_003855.1	1563	acccttgatgaacccttagctt	17913	450643	transcription, regulat	transcription co-	-
2477	BCAS1	NM_003857.1	1448	tggcgttttcgaacaatgca	331936	740726	-	repressor	-
2478	AGP-S	NM_003859.1	1061	gtcaagagcctctatgcaaca	217144	671981	-	electron transfer	breast cancer(乳癌)
2479	AGP-S	NM_003859.1	1217	ggatagcctgttaagagaatt	217151	671988	see also 2478 line	flavoprotein	chondrodysplasia(軟骨異形成症)
2480	AP3B1	NM_003864.3	1262	aactgacccaactatgacaag	267606	556653	-	protein transporter	-
2481	AP3B1	NM_003864.3	1331	atcaactctcttcgaatttc	267606	556657	see also 2480 line	-	-
2482	AP3B1	NM_003864.3	1304	atctgcgaactatgacaaac	267619	556669	see also 2480 line	-	-
2483	AP3B1	NM_003864.3	1808	cgcgaagatgatacaaaacac	267620	556671	see also 2480 line	-	-
2484	AP3B1	NM_003864.3	1847	agagtttattgacgactatg	267624	556674	see also 2480 line	-	-
2485	AP3B1	NM_003864.3	1982	tgcacatctactctactctca	267631	556679	see also 2480 line	-	-
2486	AP3B1	NM_003864.3	1991	atctctactctcaaatgaag	267632	556680	see also 2480 line	-	-
2487	AP3B1	NM_003864.3	1991	atctctactctcaaatgaag	267634	556684	see also 2480 line	-	-
2488	AP3B1	NM_003864.3	2018	ggagccctggatctctactt	267635	556685	see also 2480 line	-	-
2489	AP3B1	NM_003864.3	2019	ggatgacatggaatctactg	267636	556686	see also 2480 line	-	-
2490	AP3B1	NM_003864.3	2970	atggatgactcttgctatc	267669	556707	see also 2480 line	-	-
2491	BLZF1	NM_003866.2	1104	agggtatggcagatgattaac	275556	716890	transcription, regulat	-	-
2492	GPR49	NM_003867.2	878	tgtgtagaacctctctctatt	239986	624966	receptor, activity,	protein-hormone	-
2493	GPR49	NM_003867.2	1368	tgtgttactctgttaactcact	240005	624989	signal, transduction	receptor	-
2494	GPR49	NM_003867.2	1376	atgttttaactcaactaaanta	240006	624990	see also 2492 line	-	-
2495	GPR49	NM_003867.2	1555	atggaagcctctcaagaaga	240011	624998	see also 2492 line	-	-
2496	MAPKAPK 5	NM_003868.2	479	aacatagctcgactatttgaat	90141	507866	kinase, related,	-	-
2497	BHLHB2	NM_003670.1	385	gaacatcagcagatgaacpant	1504	456374	signal, transduction	-	-
2498	DENR	NM_003677.2	162	aggaaacagtccaactgaagtc	56238	476424	transcription, regulat	transcription factor	-
2499	MAOD	NM_003862.2	215	tcctgattacttactatctag	219558	607005	kinase, related,	-	-
2500	MAOD	NM_003862.2	927	ggatattggcttgactatctag	219572	607013	signal, transduction	-	-

2501	MADD	NM_003682.2	2849	tggcgaataactcactcaatggaga	219609	607059	see also 2499 line	
2502	MADD	NM_003682.2	3319	tggccagaccacactactatagt	219619	607068	see also 2499 line	
2503	MADD	NM_003682.2	3324	caaacacactactactatagaaga	219620	607067	see also 2499 line	
2504	MADD	NM_003682.2	3327	accacactactactatagaagacc	219622	607068	see also 2499 line	
2505	EXO1	NM_003686.3	816	tgcacatgcacacaaagcattca	26281	493521	-	transferase
2506	CASK	NM_003688.1	85	caagcttgcctcactctctctctc	75315	497205	kinase related	-
2507	CASK	NM_003688.1	158	atgacacacacacacacacacgt	75322	497210	see also 2506 line	
2508	CASK	NM_003688.1	183	aggttaacacacacacacacacaa	75323	497211	see also 2506 line	
2509	CASK	NM_003688.1	184	aggttaacacacacacacacacaa	75324	497212	see also 2506 line	
2510	CASK	NM_003688.1	213	agcgaatctctctctctctctctga	75325	497213	see also 2506 line	
2511	CASK	NM_003688.1	809	gcgcgttaagatctactctctctat	75352	497225	see also 2506 line	
2512	CASK	NM_003688.1	956	cgctctgtctcaagctctcaaatcc	75356	497229	see also 2506 line	
2513	CASK	NM_003688.1	1485	cgatctgtctctctctctctctctc	75367	497243	see also 2506 line	
2514	CASK	NM_003688.1	1602	cagcacaagctctactctctctctg	75373	497250	see also 2506 line	
2515	CASK	NM_003688.1	1706	ggagagatctactctctctctctctg	75375	497257	see also 2506 line	
2516	CASK	NM_003688.1	1707	ggagatctactctctctctctctctg	75376	497258	see also 2506 line	
2517	CASK	NM_003688.1	1708	ggagatctactctctctctctctctg	75377	497259	see also 2506 line	
2518	CASK	NM_003688.1	1802	atgctctacacacacacacacac	75379	497262	see also 2506 line	
2519	CASK	NM_003688.1	1859	aagcagaacacacacacacacac	75382	497265	see also 2506 line	
2520	CASK	NM_003688.1	1870	atctctacacacacacacacacac	75383	497266	see also 2506 line	
2521	CASK	NM_003688.1	1874	atctctacacacacacacacacac	75384	497267	see also 2506 line	
2522	CASK	NM_003688.1	1957	ggcgaatctacacacacacacacac	75385	497268	see also 2506 line	
2523	CASK	NM_003688.1	1997	ggcgaatctacacacacacacacac	75387	497269	see also 2506 line	
2524	CASK	NM_003688.1	2674	ccacacacacacacacacacacac	75399	497273	see also 2506 line	
2525	STK18	NM_003691.1	595	ggcgaacacacacacacacacac	101404	515492	kinase related	protein kinase CK2
2526	TNFSF11	NM_003701.2	366	caagcgcgagcagcagcagcagc	167666	584801	receptor activity	-
2527	SLOC25A12	NM_003705.2	187	tggcgaagatgagctgctcacaac	152972	553890	-	-
2528	SLOC25A12	NM_003705.2	192	aggagatgactgctcacaacacag	152973	553891	see also 2527 line	-
2529	KLF7	NM_003709.1	325	tggcctcttgcctcactatgattg	5984	461071	transcription regulat	-
2530	KLF7	NM_003709.1	328	acactcttgcctcactatgattg	5985	461072	or	zinc binding
2531	KLF7	NM_003709.1	993	aacgctctgcgaagatttatcac	6000	461076	see also 2529 line	-
2532	KLF7	NM_003709.1	996	ggctctgcgaagatttatcacaa	6002	461077	see also 2529 line	-
2533	KLF7	NM_003709.1	998	gtctgcgaagatttatcacaaaa	6003	461078	see also 2529 line	-
2534	SPIN1	NM_003710.2	1490	atctccagaagagatctcttggc	293581	595313	-	-
2535	PPAP2A	NM_003711.2	471	ctgcctctgcctctctctctcaat	196307	598933	phosphatase, kinase related	-
2536	PPAP2B	NM_003713.3	875	ggagatctcaccagctctctctca	196351	746769	signal transduction	-
2537	PPAP2B	NM_003713.3	876	ggagatctcaccagctctctctca	196352	746769	see also 2536 line	-
2538	VOP	NM_003715.1	1778	caatctgcacacacacacacacac	271284	652866	-	protein transporter
2539	CADPS	NM_003716.2	2357	gtcttcacaccccgaacttgc	305453	704207	-	-
2540	CADPS	NM_003716.2	2380	accacagctctcctcttggatg	305454	704208	see also 2539 line	-

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2541	CADPS	NN_003715.2	3281	hcccaacatttttttagatg	305475	704226	see also 2539 line		
2542	CADPS	NN_003715.2	3282	ggccacatttttttagatg	305476	704227	see also 2539 line		
2543	CADPS	NN_003715.2	3375	aaagatttaacatgaacaccc	305480	704233	see also 2539 line		
2544	CADPS	NN_003715.2	3376	ttgatttcccaagctcaatgac	305486	704241	see also 2539 line		
2545	CADPS	NN_003715.2	3733	ttgatttcccaagctcaatgac	305487	704242	see also 2539 line		
2546	CADPS	NN_003715.2	3735	ttgatttcccaagctcaatgac	305493	704251	see also 2539 line		
2547	PD5B8	NN_003719.1	780	tgctgtcttaagtaacgtcttc	161941	589917	signal transducer		
2548	PD5B8	NN_003719.1	783	ttctctataagtaacgtcttc	161942	589918	see also 2547 line		
2549	PD5B8	NN_003719.1	1786	ttctctataagtaacgtcttc	161975	589928	see also 2547 line		
2550	PD5B8	NN_003719.1	1788	ttctctataagtaacgtcttc	161980	589934	see also 2547 line		
2551	PTCH2	NN_003738.2	434	ctggcgttaagctcaagctatg	245681	633275	receptor activity		
2552	PTCH2	NN_003738.2	436	ggcgttaagctcaagctatg	245682	633276	see also 2551 line		
2553	KCNK5	NN_003740.2	1191	cttcaagtagctcaacatctca	261320	644805	channel		
2554	ABCB11	NN_003742.2	3264	atcaggtcaagcttttttaaac	69636	491776	voltage-gated ion channel		
2555	ABCB11	NN_003742.2	3267	acgtcagcttttttaaaccttc	69637	491777	sodium-exporting		
2556	ABCB11	NN_003742.2	3819	acccatttttagagctctcaaa	69655	491789	ATPase		intrahepatic cholestasis(肝内胆汁鬱滞)
2557	ABCB11	NN_003742.2	3820	acccatttttagagctctcaaa	69656	491790	see also 2554 line		
2558	ABCB11	NN_003742.2	3824	ttgcaagtagctcaaaacttg	69657	491791	see also 2554 line		
2559	NCOA1	NN_003743.3	716	tgctcaaaatcaactgaat	111936	450798	receptor activity, transcription, regulat or,		
2560	NCOA1	NN_003743.3	1220	cccaacaaagtgaaacttgc	111950	450813	see also 2559 line		
2561	NCOA1	NN_003743.3	1224	caccaagtgaaacttgcctcc	111951	450814	see also 2559 line		
2562	NCOA1	NN_003743.3	1551	agcaaatgtctcttaaaccaag	111965	450820	see also 2559 line		
2563	NCOA1	NN_003743.3	3708	tcaccaaatgtctcttaaac	112030	450870	see also 2559 line		
2564	NUMB	NN_003744.3	2146	aacctttctcagctgcttcca	320780	694360	transferrase, transferring		
2565	TNKS	NN_003747.1	2639	atcttatggcatgttgacatag	136776	649805	glycosyl groups		
2566	TNKS	NN_003747.1	2881	agaccttaacatctgtttaaa	136782	649816	see also 2565 line		
2567	TNKS	NN_003747.1	3174	ttgctgtatgagtcataaaga	136787	649820	see also 2565 line		
2568	E1F3S8	NN_003752.2	284	atccgaatgcatggaagttag	56768	476558	translation initiation factor		
2569	S1C4A4	NN_003759.1	281	tgcaaacacatccatctcatct	256978	642909	proximal renal tubular acidosis(近位尿細管性アジドシス)		
2570	S1C4A4	NN_003759.1	283	cgagagacatccatctcatct	256979	642910	see also 2569 line		
2571	S1C4A4	NN_003759.1	1979	ttatcagtcagcatctctcttc	257038	642932	see also 2569 line		
2572	S1C4A4	NN_003759.1	3171	ttgagatcagcaacctctctcag	257065	642943	see also 2569 line		
2573	E1F6G3	NN_003760.2	4131	aaacagatctttctaaaggtttt	49404	473065	see also 2569 line		
2574	VAMP4	NN_003762.1	506	atgtgtgtgtgtgtgtgtgtgt	302771	686538	see also 2574 line		
2575	VAMP4	NN_003762.1	508	gtgtgtgtgtgtgtgtgtgtgt	302772	686538	see also 2574 line		
2576	VAMP4	NN_003762.1	509	ttgtgtgtgtgtgtgtgtgtgt	302773	686537	see also 2574 line		

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2577	BECN1	NM_003766.2	1151	agctcttcgcagcacaactaa	311090	676459	apoptosis	-	-
2578	BECN1	NM_003766.2	1362	ctgctctctatctcccaaaccc	311098	676464	see also 2577 line	-	-
2579	DNAH11	NM_003777.1	2139	ttgatcaacctcgtgttaaat	78229	499632	-	-	-
2580	DNAH11	NM_003777.1	2139	atcaacctcgtgttaaatcgt	78300	499683	see also 2579 line	-	-
2581	DNAH11	NM_003777.1	2252	gactaacctcagctcgttaac	78334	499689	see also 2579 line	-	-
2582	DNAH11	NM_003777.1	3572	atccagcagcagcagcagctga	78558	499709	see also 2579 line	-	-
2583	DNAH11	NM_003777.1	12350	caagcctcagcagcagcagctatcc	78790	499902	see also 2579 line	-	-
2584	B4GALT3	NM_003779.2	1179	tcctcttcgcagccagcttccc	209958	601557	transferrin, glycosyl groups	-	-
2585	B4GALT3	NM_003780.2	128	gttaccctctatctctacttga	209934	601542	-	-	-
2586	B3GALT3	NM_003781.2	542	cttctgctatctctctatctg	165174	561293	-	-	-
2587	B3GALT2	NM_003783.2	1401	aacttcttcttcttcttctctctcc	209803	559067	-	-	-
2588	B3GALT2	NM_003783.2	1700	ccgtttcttcttcttcttctctct	209817	559076	see also 2587 line	-	-
2589	B3GALT2	NM_003783.2	1814	cttcttcttcttcttcttcttct	209821	559079	see also 2587 line	-	-
2590	MBTPS1	NM_003791.1	1433	ttcttcttcttcttcttcttctga	182833	576460	subtilase	-	-
2591	MBTPS1	NM_003791.1	1452	tctcttcttcttcttcttcttctga	182833	576461	see also 2590 line	-	-
2592	MBTPS1	NM_003791.1	2669	gacttcttcttcttcttcttctct	182952	576481	see also 2590 line	-	-
2593	EED	NM_003797.2	907	tgcctgactcttcttcttcttct	275004	535032	transcription regulator	-	-
2594	EED	NM_003797.2	1360	ccagcagcagcagcagcagcagc	275015	535049	see also 2593 line	-	-
2595	EED	NM_003797.2	1382	tgcctgactcttcttcttcttct	275016	535049	see also 2593 line	-	-
2596	EED	NM_003797.2	1396	atgttctgactcttcttcttctt	275017	535051	see also 2593 line	-	-
2597	CTNNA1	NM_003798.1	2091	tctcttcttcttcttcttcttct	311560	707307	apoptosis	-	-
2598	RNGT1	NM_003800.1	342	gcctctgagcagcagcagcagc	196373	588723	phosphatase	-	-
2599	RNGT1	NM_003800.1	1192	atgttcttcttcttcttcttctga	196397	588750	see also 2598 line	-	-
2600	MYO1	NM_003803.1	533	atgtctcttcttcttcttcttctaa	289302	701690	structural constituent of muscle	-	-
2601	MYO1	NM_003803.1	760	cggctctctctctcttcttcttctaa	289309	701700	see also 2600 line	-	-
2602	MYO1	NM_003803.1	1898	tgttctgagcagcagcagcagcagc	289339	701734	see also 2600 line	-	-
2603	RIPK2	NM_003821.4	409	ctcgccttctctcagcagcagcagc	99159	513451	kinase, related, apoptosis, signal transduction	-	-
2604	NRA2	NM_003822.2	827	ccpctgagcagcagcagcagcagc	422	447382	or, transcription regulator	-	-
2605	NRA2	NM_003822.2	1139	tctctgagcagcagcagcagcagc	434	447397	see also 2604 line	-	-
2606	NRA2	NM_003822.2	1636	atctgagcagcagcagcagcagc	454	447405	see also 2604 line	-	-
2607	NRA2	NM_003822.2	1637	atctgagcagcagcagcagcagc	455	447409	see also 2604 line	-	-
2608	NAPA	NM_003827.1	163	tctctgagcagcagcagcagcagc	269474	651932	-	-	-
2609	NAPA	NM_003827.1	256	ccctgagcagcagcagcagcagc	269475	651940	see also 2608 line	-	-
2610	NAPA	NM_003827.1	867	ccctgagcagcagcagcagcagc	269479	651944	see also 2608 line	-	-
2611	RIPK3	NM_003831.2	462	tgatgagcagcagcagcagcagc	283358	667595	kinase related	-	-

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2612	RIOK3	NM_003831.2	888	ctgaattcttgagcaactcact	283363	667805	see also 2611 line	-	-
2613	MATN4	NM_003833.2	1104	gcctctcttgaccacatctgga	148167	696537	-	-	-
2614	PEX11B	NM_003846.1	400	gtttctctctgaattc	309856	701962	-	-	-
2615	PEX11B	NM_003846.1	423	gaacgcgtgactatgatttc	309857	701963	see also 2614 line	-	-
2616	TIF1	NM_003852.2	468	gcacacacaaatggagctcttg	41972	469965	transcription_regulat	-	-
2617	TIF1	NM_003852.2	1186	agctctgactcttaattgag	41982	469965	or	-	-
2618	TIF1	NM_003852.2	2158	gcctctgactgacaaatcgat	42023	470027	see also 2616 line	-	-
2619	TIF1	NM_003852.2	2158	tgctgagcaactcgatataaa	42025	470028	see also 2616 line	-	-
2620	TIF1	NM_003852.2	2797	ctctactctgcctgattttac	42042	470045	see also 2616 line	-	-
2621	TIF1	NM_003852.2	2965	aaatgacgaactgctgataaa	42048	470049	see also 2616 line	-	-
2622	CCNK	NM_003856.2	487	agctctgtatttataaatgag	308139	688701	cell cycle, transcription_regulat or, kinase related	-	-
2623	DPM1	NM_003859.1	561	cgatataccggaagaagatttc	212009	600282	-	-	-
2624	FGF17	NM_003867.1	88	gaaatataccctctctcctaat	165091	565583	signal transduction	-	-
2625	FGF17	NM_003867.1	92	ataccctctctaatattaac	165092	565583	see also 2624 line	-	-
2626	FGF17	NM_003867.1	96	ccgctctctaatattacaaat	165093	565584	see also 2624 line	-	-
2627	IQGAP1	NM_003870.2	1856	cgagatgactcaactctgtttg	121313	526584	signal transduction	-	-
2628	IQGAP1	NM_003870.2	1857	aaagatgactctgtgtatag	121314	526585	see also 2627 line	-	-
2629	IQGAP1	NM_003870.2	3256	ctctgtaggaactcttgatga	121341	526611	see also 2627 line	-	-
2630	IQGAP1	NM_003870.2	3808	gcctctctgaactctatgag	121353	526622	see also 2627 line	-	-
2631	IQGAP1	NM_003870.2	3809	gcctctgaactctctatgag	121354	526623	see also 2627 line	-	-
2632	IQGAP1	NM_003870.2	4240	acgttttaattggtgtctatcc	121369	526639	see also 2627 line	-	-
2633	NR2	NM_003872.1	184	cccgaaaccaacagaaagattgt	200658	636757	receptor activity	-	-
2634	NR2	NM_003872.1	852	ctctgctcgagatctaatgac	200659	636773	see also 2633 line	-	-
2635	NR2	NM_003872.1	2357	tgtatgactctctgataagc	200691	636782	see also 2633 line	-	-
2636	CD84	NM_003874.1	987	gagtcagaactctatgaaat	313572	704292	-	-	-
2637	SOCS2	NM_003877.3	737	ctggagatctgactcttaattg	310206	676363	signal transduction	-	-
2638	SOCS2	NM_003877.3	740	ggagatctgactcttaattgag	310208	676364	see also 2637 line	-	-
2639	WISP1	NM_003882.2	395	cgcccgagatgacataaggaat	124967	528828	signal transduction	-	-
2640	HDAC3	NM_003883.2	1020	acctctctacttgaactcttc	113623	526388	transcription_regulat or, apoptosis, cell cycle	-	-
2641	HDAC3	NM_003883.2	1081	cagacccctcagatgaaatcaga	113625	526390	see also 2640 line	-	-
2642	HDAC3	NM_003883.2	1084	caacccctcagatgaaatcaga	113626	526391	see also 2640 line	-	-
2643	HDAC3	NM_003883.2	1124	caatctccagacatcattttgaa	113627	526392	see also 2640 line	-	-
2644	HDAC3	NM_003883.2	1127	atctccagacatcattttgaaa	113628	526393	see also 2640 line	-	-
2645	HDAC3	NM_003883.2	1128	tccgcagacatcattttgaaac	113629	526394	see also 2640 line	-	-
2646	PROZ	NM_003891.1	1186	ctggtttaaacagctatgaaat	134686	552729	trypsin	-	-
2647	LD81	NM_003893.3	851	tggccaacagatgatatacttg	30432	461145	transcription_regulat or	-	-

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2648	DBI	NM_003893.3	1081	accatcatctccgaataagacc	30440	461152	see also 2647 line	
2649	DBI	NM_003893.3	1207	ctcgtctctctctccatccccc	30441	461154	see also 2647 line	
2650	DBI	NM_003893.3	1239	tccctccgcctctctctctct	30442	461156	see also 2647 line	
2651	DBI	NM_003893.3	1630	tgcacgacgagacgcctctctac	30444	461159	see also 2647 line	
2652	DBI	NM_003893.3	1633	acgcgcgcgcgcgcctctctacac	30445	461160	see also 2647 line	
2653	SIAT3	NM_003895.2	601	cgcgaagctccgcgaagacc	21293	601049	-	
2654	SIAT3	NM_003895.2	820	aacctctctctctctctctctct	212910	601056	see also 2653 line	
2655	SYN12	NM_003898.1	1966	agctgctggcgcctgctctctt	55246	498544	phosphatase	inositol-1, 4, 5-trisphosphatase
2656	ARRGEF7	NM_003899.2	2391	gcctgagatgagacaactctat	295476	707107	signal transduction	-
2657	SGP1	NM_003901.2	1060	gtctctctctctccacagcttccc	233923	618275	apoptosis	-
2658	SGP1	NM_003901.2	1441	ttctgtgagacagctctctgtga	233929	618282	see also 2657 line	-
2659	FLUBP1	NM_003902.2	1753	cagctgcgcagcttgctctctacc	4321	482533	transcription regulator	-
2660	CDCl6	NM_003903.2	1512	atctggacactctgttgacaact	306833	675198	cell cycle	-
2661	APBP1	NM_003905.2	606	tatgagatctctgacgataag	235785	621579	cell cycle	-
2662	APBP1	NM_003905.2	706	atgagctgctctctctctctct	235790	621584	see also 2661 line	-
2663	APBP1	NM_003905.2	707	tggctctctctctctctctct	235791	621585	see also 2661 line	-
2664	APBP1	NM_003905.2	711	tggctctctctctctctctct	235792	621586	see also 2661 line	-
2665	APBP1	NM_003905.2	987	tggctctctctctctctctct	235803	621603	see also 2661 line	-
2666	APBP1	NM_003905.2	1042	tccagctctctctctctctct	235805	621605	see also 2661 line	-
2667	EIF2S2	NM_003906.2	680	atcgcgcctctctctctctctg	51216	476035	translation initiation factor	-
2668	CPNE3	NM_003905.1	1289	aacctctctctctctctctct	172604	730652	kinase related	-
2669	PRPF4B	NM_003913.3	1671	cctctctctctctctctctct	99189	512841	kinase related	Alzheimer disease (アルツハイマー病)
2670	PRPF4B	NM_003913.3	1887	agcctctctctctctctctct	99197	512846	see also 2669 line	-
2671	PRPF4B	NM_003913.3	2103	tgacatctctctctctctct	99209	512852	see also 2669 line	-
2672	PRPF4B	NM_003913.3	2465	ctctctctctctctctctct	99224	512864	see also 2669 line	-
2673	CPNE1	NM_003915.2	67	tactctctctctctctctct	334655	738654	-	-
2674	CPNE1	NM_003915.2	124	agacatgctctctctctctct	334659	738660	see also 2673 line	-
2675	CPNE1	NM_003915.2	603	tcgcctctctctctctctct	172532	771303	see also 2673 line	-
2676	CPNE1	NM_003915.2	1089	gcacctctctctctctctct	172544	771311	see also 2673 line	-
2677	CPNE1	NM_003915.2	1089	cmctctctctctctctct	172545	771312	see also 2673 line	-
2678	SGCE	NM_003919.1	308	tactctctctctctctctct	318372	667442	-	alcoholism (アルコール依存症)
2679	SGCE	NM_003919.1	356	ccacacgcgcgcctctctct	318373	667444	see also 2678 line	-
2680	SGCE	NM_003919.1	358	gcctctctctctctctctct	318374	667445	see also 2678 line	-
2681	SGCE	NM_003919.1	358	accctctctctctctctct	318375	667446	see also 2678 line	-
2682	TIMELESS	NM_003920.1	1565	ggcagctctctctctctct	44235	469184	-	-
2683	PHOX2B	NM_003924.2	485	tccagctctctctctctct	9264	447735	transcription regulator	congenital central hypoventilation syndrome (先天性肺泡低換気症候群、Hirschsprung disease) (先天性ヒルシュプルング病)

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2684	PHOX2B	NM_003924.2	493	aacccacgaagagccacttttg	9265	447736	see also 2683 line
2685	PHOX2B	NM_003924.2	1268	cttcacaaagccctcttgacg	9269	447740	see also 2683 line
2686	PHOX2B	NM_003924.2	1269	tgccaaagccctcttgacgaga	9270	447743	see also 2683 line
2687	MBD3	NM_003926.5	110	cacagggatctcttactatag	31556	461411	transcription/ regulat
2688	MBD2	NM_003927.3	949	tacaaacttgccatttagcaaa	20356	461396	transcription/ regulat
2689	SCAP2	NM_003930.3	328	gcctctcttgaggaaattgaagc	252734	675298	kinase, related,
2690	SCAP2	NM_003930.3	1249	atgagtggtgatgtatttcattt	252757	675328	signal transduction
2691	SCAP2	NM_003930.3	1270	tctctagcaagaatcacataga	252758	675331	see also 2689 line
2692	WASF1	NM_003931.1	958	ctcagccttaagcttggtcatatg	114960	743743	actin polymerizing
2693	WASF1	NM_003931.1	962	gacatccttggtcatctatgttg	114961	743744	see also 2692 line
2694	WASF1	NM_003931.1	1133	catcttgctacaggtttgatg	114963	743747	see also 2692 line
2695	AP3D1	NM_003934.2	653	caggagccgcaaatgpcatca	267118	695560	protein transporter
2696	BTRO	NM_003939.2	193	gcgaacccctcaggaaatata	233011	617583	signal transduction
2697	BTRO	NM_003939.2	375	gggaacactctacaaactatga	233020	617590	see also 2696 line
2698	BTRO	NM_003939.2	1715	tgattcaactatcacaaatcc	233058	617631	see also 2696 line
2699	SLC25A14	NM_003951.2	209	ggtatctcttcgggaataatcc	181011	574257	—
2700	SLC25A14	NM_003951.2	219	cgggaataactcaatattttct	181013	574258	see also 2699 line
2701	MAP3K14	NM_003954.1	487	ctctagaataatccaaagtcca	89159	507050	kinase related
2702	MAP3K14	NM_003954.1	915	aaactatgcaccttgcaatgt	89164	507056	see also 2701 line
2703	UBE1C	NM_003968.3	124	aaactatgcaccttgcaatgt	235398	620484	apoptosis,
2704	UBE1C	NM_003968.3	125	aaactatgcaccttgcaatgt	235399	620485	see also 2703 line
2705	UBE1C	NM_003968.3	127	atctcgaacacctgaaagag	235399	620486	see also 2703 line
2706	UBE1C	NM_003968.3	207	ctcagctcttggtatcagtg	235394	620489	see also 2703 line
2707	UBE1C	NM_003968.3	207	tgagagagatgcataataaat	235415	620506	see also 2703 line
2708	UBE1C	NM_003968.3	879	gagagagatgcataataaat	235416	620507	see also 2703 line
2709	UBE1C	NM_003968.3	881	gagagagatgcataataaat	235417	620508	see also 2703 line
2710	UBE2M	NM_003968.2	941	ctggaagcatcgaatctacgata	231756	616559	—
2711	UBE2M	NM_003968.2	942	tggaagccagctcttcagataac	231757	616556	see also 2710 line
2712	UBE2M	NM_003968.2	946	agccatctcttcagataaactcc	231758	616557	see also 2710 line
2713	UBE2M	NM_003968.2	956	tacgataaactctcaattatgt	231759	616559	see also 2710 line
2714	SPAG9	NM_003971.3	574	atgctctcaattatggcaaca	320375	730029	—
2715	SPAG9	NM_003971.3	619	cagctctcaggagtgatcaact	320376	730030	see also 2714 line
2716	SPAG9	NM_003971.3	624	ctcagagatgatcaactcaact	320377	730032	see also 2714 line
2717	SPAG9	NM_003971.3	3006	gaggaatctctcaactcaact	320444	730063	see also 2714 line
2718	SPAG9	NM_003971.3	3419	tggacctcttgatcaacaaagt	320462	730066	see also 2714 line
2719	SPAG9	NM_003971.3	3594	tggaaatgaatcgaatcgaat	320466	730068	see also 2714 line
2720	DKK2	NM_003974.1	662	agggaacttggttgatgaact	130789	567080	signal transduction
2721	SLC7A6	NM_003983.1	1005	aaattgagccacttaatttg	259871	647115	protein binding
2722	SLC7A6	NM_003983.1	1015	gcctcttaatttgagcagaga	259872	647119	see also 2721 line

2723	BBOX1	NM_003986.1	851	ttgagcttgatctactctgatttt	222379	609681	—	transcription regulator, or, apoptosis, kappa-B p50 signal transduction subunit	—	oxidoreductase, acting on single donors with incorporation of molecular oxygen, incorporation of two atoms of
2724	NFKB1	NM_003998.2	589	atgcgccatccctcaaaatatta	7941	446693	—	Nuclear factor NF- κ B p50 signal transduction subunit	—	rheumatoid arthritis(関節リウマチ), atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病), multiple myeloma(多発性骨髄腫)
2725	NFKB1	NM_003998.2	2712	gagaaactcttgagctctctataa	7987	446732	—	signal transduction	—	—
2726	INP4A	NM_004027.1	3014	tgcaatctgcgaacatctcaatt	317804	742167	—	signal transduction	—	—
2727	INP4A	NM_004027.1	3015	tgcaatctgcgaacatctcaatt	317805	742168	—	signal transduction	—	—
2728	AMPD2	NM_004037.5	775	gactctgcacacacactctatgagtc	203654	594036	—	—	—	—
2729	AMPD2	NM_004037.5	788	gctcttgagatgcacatgcaggg	203655	594037	—	—	—	—
2730	B2M	NM_004048.2	288	cagcaagactgctgctctctctc	245148	632904	—	MHC class I receptor	—	carpal tunnel syndrome(手根管症候群), hemodialysis-related amyloidosis(透析関連性アミロイドーシス), diabetes(糖尿病), multiple myeloma(多発性骨髄腫)
2731	BDH	NM_004051.2	906	cgagctgctgcctgctatggatg	220848	613589	—	enzyme	—	—
2732	CAPN5	NM_004055.3	184	gccctatgacagccagcagactct	187615	581352	—	signal transduction	—	—
2733	CAB8	NM_004056.3	954	ttccgatgaccttcaactatctat	156295	557361	—	zinc binding	—	—
2734	CAB8	NM_004056.3	955	ttccgatgaccttcaactatctat	156296	557362	—	—	—	—
2735	CCBL1	NM_004059.2	220	agaagctctgcgaagttcttggc	218155	606278	—	—	—	—
2736	CCNG1	NM_004060.3	356	agcgtatagactgcagctgaagttact	306623	673865	—	cell cycle, kinase related	—	—
2737	CCNG1	NM_004060.3	683	agcctatcactgctctctcaatt	306631	673699	—	see also 2736 line	—	—
2738	CDH17	NM_004063.2	489	accctccctctctctgcgaagtt	139588	533475	—	transporter	—	—
2739	CDH17	NM_004063.2	771	aggccagcagtgagaattctctaa	139596	533489	—	see also 2738 line	—	—
2740	CDH17	NM_004063.2	1432	aagcttatgatactcaatgata	139618	533512	—	see also 2738 line	—	—
2741	CDH17	NM_004063.2	2475	ttgcttcgactgagttgatactgc	139651	533635	—	see also 2738 line	—	—
2742	CDKN1B	NM_004064.2	711	caagctgcgcagattctctacaa	219282	664292	—	kinase related, cell cycle	—	colorectal cancer(大腸癌), atherosclerosis(粥状硬化症), bladder cancer(膀胱癌), breast cancer(乳癌), ovarian cancer(卵巣性卵巢癌), prostate cancer(前立腺癌), myocardial infarction(心筋梗塞), Ewing's sarcoma(尤文氏肉腫), colorectal cancers(結腸直腸癌),
2743	CNK	NM_004073.1	219	gccgcgacacgcgcgaagatgcc	77274	705150	—	cell cycle	—	—
2744	CNK	NM_004073.1	224	atcagcgcgcgcgcgcgcgcgcgc	77275	705151	—	see also 2743 line	—	—
2745	CNK	NM_004073.1	226	catcgcgcgcgcgcgcgcgcgcgc	77276	705152	—	see also 2743 line	—	—
2746	CRY1	NM_004075.2	1743	ttgactgcagatctgagatcctaatt	24654	618556	—	receptor activity	—	—

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2747	CRY1	NM_004075.2	1851	cagatcccaatgagactatatac	24655	618357	see also 2746 line	
2748	CRY1	NM_004075.2	1963	agttttatgagatgaactatc	24659	618363	see also 2746 line	
2749	CRY1	NM_004075.2	734	gaagctctctatccctaaagc	197864	581601	—	cathepsin S translation
2750	COOH	NM_004086.1	583	ttggacagcgcgcagcttaattaa	313664	695832	—	—
2751	COOH	NM_004086.1	584	ttggacagcgcgcagcttaattac	313665	695833	—	—
2752	COOH	NM_004086.1	1024	gtcgaataaagctctctctct	313675	695843	see also 2750 line	—
2753	COOH	NM_004086.1	1181	cacgaatgttagatgacgaatt	313680	695848	see also 2750 line	—
2754	DLG1	NM_004087.1	190	tgcgcgtccggaacgaagatccc	120872	534487	kinase related	—
2755	DLG1	NM_004087.1	1571	aaggaacactgagaagctgttcc	120906	534523	see also 2754 line	—
2756	DLG1	NM_004087.1	2137	aaggaacagccgcagattaaacaa	120922	534536	—	—
2757	DLG1	NM_004087.1	2303	ttctaatacgccagctatgctaaa	120927	534540	see also 2754 line	—
2758	DUSP3	NM_004090.2	440	gcgcctccccaagcgtactatcc	195178	588346	phosphatase	—
2759	DUSP3	NM_004090.2	441	cagctccccaagcgtactatccg	195179	588347	see also 2758 line	—
2760	EOHS1	NM_004092.2	150	ttctccctcggctactactttga	233513	621988	—	—
2761	EOHS1	NM_004092.2	502	agcttcccgatgctcctgctatc	233519	622005	see also 2760 line	—
2762	EFNB2	NM_004093.2	134	tccctgaactcccaactttaccac	319586	694384	—	—
2763	EFNB2	NM_004093.2	167	ctgctactatccacagatgagag	319588	694386	—	—
2764	EFNB2	NM_004093.2	231	ctgttgcctcagatgactatctat	319590	694392	see also 2762 line	—
2765	EMX2	NM_004098.2	1403	acggaaactcagttaaagatgag	3174	443410	transcription_regulat	—
2766	EMX2	NM_004098.2	1541	cagcgatcccgaggagaataaga	3177	443414	or	—
2767	EMX2	NM_004098.2	1543	ggcgatcccgaggagaataagag	3178	443415	see also 2765 line	—
2768	STOM	NM_004099.4	508	ccggtcttttgcctcaactact	322348	692211	—	stomatocytosis(有口赤血球症)
2769	EYA4	NM_004100.2	781	atggacgcttgctacactttact	205065	595828	phosphatase,	—
2770	EYA4	NM_004100.2	794	caactttacttggtcgtactaata	205066	595829	transcription_regulat	—
2771	EYA4	NM_004100.2	1771	aggacttaagctactcagttttt	205090	595853	see also 2769 line	—
2772	PTK2B	NM_004103.3	1026	atggaatgtagctactcaactcc	98530	512887	kinase related,	—
2773	EFEMP1	NM_004105.2	542	aaacttccgaataaactttctca	142802	547758	apoptosis,	—
2774	EFEMP1	NM_004105.2	544	cagcgagataaactttctctc	142803	547759	signal transduction	—
2775	EFEMP1	NM_004105.2	1455	gaacttccacagctcagatcag	142830	547765	see also 2773 line	—
2776	EFEMP1	NM_004105.2	1586	ctcgtgtcttagatgtgacataaa	142836	547766	see also 2773 line	—
2777	FGF3	NM_004114.2	706	cccgagagctcgcagactccaac	189052	595837	signal transduction	—
2778	FGF3	NM_004114.2	707	tcgcgagcgcgcagactccagc	189053	595838	see also 2777 line	—

Downy honeycomb retinal degeneration(網膜変性), Alzheimer disease(アルツハイマー病)

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2779	FGF13	NM_004114.2	767	cgactcgacaaacacgcttaa	169054	565940	see also 2777 line	-	-
2780	FGF14	NM_004115.2	153	gcgcctctgcgcctcaagcaga	169067	565949	signal transduction	-	-
2781	FGF14	NM_004115.2	397	ctctaacctcagacacttttacc	169075	565955	see also 2780 line	-	-
2782	FKBP5	NM_004117.2	245	ggagzartatgaagctctcaaa	179987	619051	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	-
2783	FKBP5	NM_004117.2	246	ggagatataaagattctcaaaa	179988	619052	see also 2782 line	-	-
2784	FLT3	NM_004119.1	1345	agcttcacgctgcatatagaag	83688	502812	receptor activity, signal transduction	vascular endothelial growth factor receptor	-
2785	FLT3	NM_004119.1	1540	tggctctgcatcagctctctaaa	83992	502819	see also 2784 line	-	-
2786	GUCCY1B2	NM_004129.1	1742	atccatctcggaccagctttgac	234158	618551	-	receptor guanylate cyclase	-
2787	GYG	NM_004130.2	259	ctgctctctaaccttaattgaag	211699	600158	-	glycogenin	-
2788	GYG	NM_004130.2	512	tctctggcaagagcttttgatg	211707	600171	see also 2787 line	glucosyltransferase	-
2789	GYG	NM_004130.2	638	ctctactctccgcgattctaaag	211710	600180	see also 2787 line	-	-
2790	GYG	NM_004130.2	639	tctactctccgcgattctaaag	211711	600181	see also 2787 line	-	-
2791	HSPA9B	NM_004134.4	983	gagagacagggctgatttgact	85269	503973	-	ATP binding	-
2792	IDH3G	NM_004135.2	612	tgcacacgtatccactctgaag	85635	504089	-	-	-
2793	MYO9B	NM_004145.2	551	tggccatcaaacctcttaagctc	93749	509969	-	myosin ATPase	-
2794	MYO9B	NM_004145.2	552	ggccatcaaacctcttaagctc	93750	509970	see also 2793 line	-	-
2795	MYO9B	NM_004145.2	2215	taccgctgattctataaccaaat	93769	509990	see also 2793 line	-	-
2796	MYO9B	NM_004145.2	2216	accctgattctataaccaaatg	93770	509991	see also 2793 line	-	-
2797	PRKAR2A	NM_004157.1	884	tggaccgctactcttttaaga	108055	518021	kinase, related, signal transduction	cAMP-dependent protein kinase, regulator	-
2798	RAB1A	NM_004161.2	182	tccacatgaatcccgatataaga	109849	485079	signal transduction	protein transporter	-
2799	RAB1A	NM_004161.2	459	gagatagagctctctcaaat	109860	485075	see also 2798 line	-	-
2800	RAB5A	NM_004162.3	497	atgaaagcgaattcttcaat	110333	520132	signal transduction	protein transporter	-
2801	SLC1A3	NM_004172.3	645	catgtgctcttgcacatacatt	257681	641176	-	sodium/dicarboxylate e/tricarboxylate cotransporter	-
2802	SLC1A3	NM_004172.3	788	ctgtatagagctctgttaacaa	257683	641179	see also 2801 line	-	-
2803	SNRPD3	NM_004175.3	443	gtctatgtgttgcgcttaag	47344	471383	-	pre-mRNA splicing factor	-
2804	STX3A	NM_004177.3	716	atcttactctctgagctcttga	270949	652739	-	protein transporter	-
2805	TPH1	NM_004179.1	923	tggcaacgtctcatctttcaact	164528	562323	-	tryptophan 5- mono-oxygenase	-
2806	WNT2B	NM_004185.2	942	tgcacacgtctcatctttgct	255462	639606	-	-	-
2807	WNT2B	NM_004185.2	945	caccctgctcatctgtcttact	255463	639607	see also 2806 line	-	-
2808	WNT2B	NM_004185.2	948	ccgtgctcatctgtcttact	255464	639608	see also 2806 line	-	-
2809	SMCX	NM_004187.1	538	ccaggtctcgcgctttctaac	40182	704655	transcription, regulator unknown	molecular function unknown	-

圖 46 (續)

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2810	STK19	NM_004197.1	997	gaactgagagattcaagttac	101563	515559	kinase related	-	-
2811	SVT7	NM_004200.2	139	cttgcgaacattccagaatttc	275152	657629	-	-	-
2812	SVT7	NM_004200.2	140	ttatcaaaagctcaaaagtcttc	275153	657630	see also 2811 line	-	-
2813	PIGO	NM_004204.2	475	caagctatgtctatctctcttga	210278	599428	-	-	-
2814	PIGO	NM_004204.2	1323	caagctatgtctatctcttga	210283	599436	see also 2813 line	-	-
2815	USP2	NM_004205.3	1760	caagaagctctcaactcttctga	189142	583151	-	-	-
2816	PDCD8	NM_004208.2	386	gtctctatgtgagctctctaac	224901	611337	signal transduction	-	-
2817	PDCD8	NM_004208.2	387	ttctctatgtgagctctctaac	224902	611338	see also 2816 line	-	-
2818	PDCD8	NM_004208.2	938	atgaaagctctctctctctaac	224920	611354	see also 2818 line	-	-
2819	PDCD8	NM_004208.2	1223	agcaactgtgacctgtgaagaagt	224928	611363	see also 2816 line	-	-
2820	SLC6A5	NM_004211.1	826	acgcgaagctgggtctgagataag	256039	619980	glycine sodium symporter	-	-
2821	SLC6A5	NM_004211.1	1870	acgtcaaatgtcaacttcttgat	256062	619990	see also 2820 line	-	-
2822	EBAG9	NM_004215.3	827	cttgattaggtgacttgatgacc	245419	634783	apoptosis	-	-
2823	STK17B	NM_004226.2	394	tgtctgtgttgagcaagtata	101449	515512	kinase related, apoptosis	-	-
2824	SOC54	NM_004232.2	1128	tgcacctctcaactgagaatant	310249	540543	-	-	-
2825	SOC54	NM_004232.2	1723	taccagatgactctaatcaga	310265	540572	see also 2824 line	-	-
2826	TRIP15	NM_004236.1	1027	atrgatgattctttctaaagaa	138908	690117	protein binding	-	-
2827	TRIP15	NM_004236.1	1106	agccttccacagatacaatatt	138914	690122	see also 2826 line	-	-
2828	TRIP12	NM_004238.1	2785	aagccacaacactgaagatgag	230943	616046	-	-	-
2829	TRIP12	NM_004238.1	2786	agcccaagccctgagatgag	230944	616047	see also 2828 line	-	-
2830	TRIP12	NM_004238.1	2843	aagctccctgatttttttggt	230946	616051	see also 2828 line	-	-
2831	TRIP12	NM_004238.1	3080	agccctcaagctgcttgaaagaa	230952	616050	see also 2828 line	-	-
2832	TRIP12	NM_004238.1	3082	ccctcaagctgcttgaaagaa	230953	616057	see also 2828 line	-	-
2833	TRIP12	NM_004238.1	3088	agctctgataagcttgatcttaa	230954	616058	see also 2828 line	-	-
2834	TRIP12	NM_004238.1	3203	accactcaactgacactcaactc	230955	616065	see also 2828 line	-	-
2835	TRIP12	NM_004238.1	3517	tggagctgagctctcttgagaa	230962	616073	see also 2828 line	-	-
2836	TRIP12	NM_004238.1	3519	gaacttgagctcttgagaactc	230963	616074	see also 2828 line	-	-
2837	TRIP12	NM_004238.1	3534	tagaatctctgagcatgctctca	230964	616075	see also 2828 line	-	-
2838	TRIP12	NM_004238.1	3762	tgtttccaagatgaacacactgc	230969	616083	see also 2828 line	-	-
2839	TRIP12	NM_004238.1	4276	tggacaagaagctctatcaaat	230983	616094	see also 2828 line	-	-
2840	TRIP12	NM_004238.1	4277	tggacaagaagctctatcaaat	230984	616095	see also 2828 line	-	-
2841	TRIP12	NM_004238.1	4474	tcccaacaacactgaaatataa	230991	616102	see also 2828 line	-	-
2842	TRIP12	NM_004238.1	4561	cttgtatcaactgttgatgaag	230997	616110	see also 2828 line	-	-
2843	TRIP12	NM_004238.1	4562	tgtatcaactgttgatgaag	230998	616111	see also 2828 line	-	-
2844	TRIP12	NM_004238.1	4823	atcaaccacactgctctcaaga	231009	616132	see also 2828 line	-	-
2845	TRIP12	NM_004238.1	5081	gaagctgaagaagaactcttcaa	231019	616144	see also 2828 line	-	-
2846	TRIP12	NM_004238.1	5178	ttcaaaagctgaagctgaatttt	231025	616147	see also 2828 line	-	-
2847	TRIP10	NM_004240.1	661	caagctgcccgaagcttgatgaa	138655	638243	signal transduction	-	-
2848	TRIP10	NM_004240.1	666	gccccagatattcttgatgcttc	138656	638244	see also 2847 line	-	-

2849	IGM5	NM_004245.1	224	accocagagcagcagatctca	153650	736319	-	protein-glutamine gamma-glutamyltransferase	-
2850	QLP2R	NM_004246.1	173	tggttctcccaagcgaagtaca	242669	630784	gpor, receptor activity, signal transduction	G-protein coupled receptor	-
2851	U5-118KO	NM_004247.1	393	taagctgtctagctgattctt	47430	477737	-	translation elongation factor	-
2852	U5-116KO	NM_004247.1	1498	aagcttaccacacagatgagc	47454	477770	see also 2851 line	-	-
2853	U5-116KO	NM_004247.1	2407	ttagcttgatgtaagctttaa	47477	477793	see also 2851 line	-	-
2854	U5-116KO	NM_004247.1	2537	gtcttctgagcttctctcttt	47480	477798	see also 2851 line	-	-
2855	U5-118KO	NM_004247.1	2948	aacagatggtgtctcaattac	47486	477802	see also 2851 line	-	-
2856	RA99A	NM_004251.3	610	gggacaacgtgcctactcttat	110407	520164	signal transduction	protein transporter	-
2857	PLAA	NM_004253.2	259	tctcaagctgtgctgaatgaca	298469	539012	-	phospholipase A2 activator	-
2858	PLAA	NM_004253.2	658	cagctaccctcagctgaacttat	298483	539023	see also 2857 line	-	-
2859	PLAA	NM_004253.2	906	aagacacactctctcaatcaga	298494	539031	see also 2857 line	-	-
2860	PLAA	NM_004253.2	945	aagcactaactctgaattttatt	298495	539032	see also 2857 line	-	-
2861	PLAA	NM_004253.2	2109	caacttcaactgactgactaaat	298538	539081	see also 2857 line	-	-
2862	SEMA4F	NM_004263.2	528	tgggacacctctctttttatc	251289	637581	-	receptor	-
2863	SEMA4F	NM_004263.2	550	cgaactctgagaaacttttgtt	251300	637583	see also 2862 line	-	-
2864	SEMA4F	NM_004263.2	560	tccaactcagctgagaaacttga	251301	637584	see also 2862 line	-	-
2865	FADS2	NM_004265.2	1244	aagggagcagctctctcttcaac	226740	609869	receptor activity, transcription_regulat or,	-	-
2866	CRSP6	NM_004265.3	1458	gtcctcaagctttttgaaataat	248300	755134	or,	-	-
2867	CHST3	NM_004273.2	875	ctcgtctggggcagctttctca	217387	605580	-	-	-
2868	EF1E1	NM_004280.2	458	tgcgtgtgtttttctcaatcagc	302335	477478	-	-	-
2869	BAG3	NM_004281.2	568	cagctcgcagcagctacatctcc	129134	532422	apoptosis	protein binding	-
2870	GTPBP1	NM_004286.3	255	aggatgcggcagagacacttat	57562	477583	-	translation elongation factor	-
2871	GTPBP1	NM_004286.3	256	gggctctcggagagacacttatg	57563	477584	see also 2870 line	-	-
2872	GTPBP1	NM_004286.3	259	atggcgagagacacttatgtcca	57564	477595	see also 2870 line	-	-
2873	PSD8P	NM_004288.2	503	tgtctaacgtatgactctctaat	317024	681513	-	-	-
2874	RNF14	NM_004290.3	389	gtgagaaacacagactctcttg	112389	525685	transcription_regulat or,	-	-
2875	GDA	NM_004293.1	199	gtgcgcagacacgcgcgaataatg	156998	594083	-	-	-
2876	GDA	NM_004293.1	808	agccataataatgaataactgtga	157023	594116	see also 2875 line	-	-
2877	RGS6	NM_004296.3	382	gtctcaccagctgaatactttct	192384	586167	gpor, signal transduction	regulator of G- protein signaling	-
2878	RGS6	NM_004296.3	433	ggagagacacttggaacatactc	192385	586170	see also 2877 line	-	-
2879	RGS6	NM_004296.3	824	tgcagcagctgtgtgacacacaa	192392	588173	see also 2877 line	-	-
2880	GNA14	NM_004297.2	649	aagtgggaaagacactttttca	108096	519425	gpor, signal transduction	signal transducer	-

図4-6 (続き)

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2881	GNA14	NM_004329.2	727	caccgaagcgtcttaccacaaca	109097	519428	see also 2880 line			inflammatory myofibroblastic tumors (炎症性筋肉線維芽細胞性腫瘍), non-hodgkin lymphoma (非ホジキンリンパ腫), anaplastic large cell lymphoma (未分化大細胞リンパ腫), inflammatory myofibroblastic tumor (炎症性筋線維芽細胞腫瘍), Hodgkin's disease (ホジキン病)
2882	ALK	NM_004304.3	3740	aaacaatgaccgcgaagatgag	49740	493740		receptor activity, kinase, related,	transmembrane receptor protein tyrosine kinase	
2883	ALK	NM_004304.3	4974	ggcctctatccgctgaatgact	49754	493759	see also 2882 line			
2884	ARRGD4	NM_004305.3	412	ggcctgacgcgcgctgaataatc	129085	664958	signal transduction	protein binding		
2885	ARRGD4	NM_004305.3	417	ggcctgacgcgcgctgaataatc	129088	664959	see also 2884 line			
2886	ARRB2	NM_004313.3	276	ctcgaagctccgcgtctactctg	314063	678912	signal transduction			
2887	ASPH	NM_004318.2	2273	atcttcgcgcgtctactctg	138130	712787				
2888	ATP2A1	NM_004320.2	1288	ggagagcgtctctgaagaagta	72697	565005				muscle contracture (筋拘縮症)
2889	ATP2A1	NM_004320.2	1671	gctctatgacgcgcgtctaaact	72701	565015	see also 2888 line			
2890	ATP2A1	NM_004320.2	1673	gctctatgacgcgcgtctaaact	72702	565016	see also 2888 line			
2891	ATP2A1	NM_004320.2	2961	tgcacccgcgcgcgcgcgcgcgc	72706	565026	see also 2888 line			
2892	ATP2A1	NM_004320.2	2964	accocctgcgcgcgcgcgcgcgc	72707	565027	see also 2888 line			
2893	ATSV	NM_004321.3	2879	ctctcttgctgcccacatttg	73906	505108		receptor signaling		
2894	BAG1	NM_004323.2	871	agcctctctgcgaactctgaag	129121	532399	signal transduction			breast cancer (乳癌)
2895	BAG1	NM_004323.2	1063	ctgagcgcgcgcgcgcgcgcgc	129124	532408	see also 2884 line			
2896	BCS1L	NM_004326.3	307	cccttactttggcctgatttg	73985	718831				tubulopathy, encephalopathy, and liver failure due to complex III deficiency (複合体III欠損症による腎症、肝障害、脳症、筋症、筋症候群)
2897	BMPRIA	NM_004329.1	674	tggagattgtctgcccacattta	74108	498133	receptor activity, kinase, related, signal transduction	transforming growth factor-beta receptor protein serine/threonine kinase		Alzheimer disease (アルツハイマー病), polyposis (ポリープ症)
2898	BUB1	NM_004336.1	1794	gggctattgtctgcacacaaccc	74438	496573	cell cycle			colorectal cancer (大腸癌)
2899	BUB1	NM_004336.1	2886	acctgttcagctatgattgattg	74463	496607	see also 2888 line			
2900	BUB1	NM_004336.1	2890	ggctcagatttatgattgaaac	74465	496608	see also 2888 line			
2901	CBOR1	NM_004337.1	1211	ggcctctctaaacaagaagaag	278089	758650		molecular function		
2902	CBOR1	NM_004337.1	1333	gtttcttcagcgcgcgcgcgcgc	278093	758653	see also 2901 line	unknown		
2903	CETN2	NM_004344.1	532	tcctgcctctatgaaagaagcc	140697	546329	transcription, regulation	calcium ion binding		
2904	RUNX2	NM_004348.1	498	aagtttcaacgcgcgcgcgcgc	10851	486626	or	RNA polymerase II		transcription factor (遺伝子発現調節因子)
2905	RUNX2	NM_004348.1	499	agtttcaacgcgcgcgcgcgc	10852	486627	see also 2904 line			
2906	RUNX2	NM_004348.1	798	agggcagcgcgcgcgcgcgcgc	10857	486632	see also 2904 line			
2907	RUNX2	NM_004348.1	1278	agcgtctcaatctctactctg	10863	486638	see also 2904 line			
2908	RUNX2	NM_004348.1	1393	ggcgcgcgcgcgcgcgcgcgc	10864	486644	see also 2904 line			
2909	RUNX2	NM_004348.1	1398	cgcgtctcaatctctactctg	10865	486646	see also 2904 line			

図46 (続き)

94		transcription_regulat		leukemia(白血病)	
2810	CBFA2T1	NM_004349.2	1120	agcaagcagacccgacacatag	1976
2811	CBFA2T1	NM_004349.2	1147	gpcacagcgcgcgcgcacaa	1977
2812	CBFA2T1	NM_004349.2	1148	gcacgcgcgcgcgcgcacaa	1978
cyclin-dependent protein kinase, regulator					
2813	CCNG2	NM_004354.1	259	gaagctacccgcgcgcgcgcgc	306751
2814	CCNG2	NM_004354.1	260	agctcccccgcgcgcgcgcgcgc	306752
2815	CCNG2	NM_004354.1	261	gcgcgcgcgcgcgcgcgcgcgc	306753
2816	CCNG2	NM_004354.1	265	acccgcgcgcgcgcgcgcgcgc	306754
2817	CCNG2	NM_004354.1	266	ccgcgcgcgcgcgcgcgcgcgc	306755
2818	CCNG2	NM_004354.1	267	ccgcgcgcgcgcgcgcgcgcgc	306756
2819	CD151	NM_004357.3	704	gcgcgcgcgcgcgcgcgcgcgc	318647
2820	CDH7	NM_004361.2	1089	gcgcgcgcgcgcgcgcgcgcgc	140276
2821	CDH7	NM_004361.2	1123	agcgcgcgcgcgcgcgcgcgcgc	140277
2822	CDH7	NM_004361.2	1959	atccgcgcgcgcgcgcgcgcgcgc	140298
2823	CDH7	NM_004361.2	2679	gcgcgcgcgcgcgcgcgcgcgc	140312
2824	CDH7	NM_004361.2	2762	gcgcgcgcgcgcgcgcgcgcgc	140316
2825	GLGN	NM_004362.1	262	ctcaacgcgcgcgcgcgcgcgcgc	137485
2826	GLGN	NM_004362.1	554	tcgcgcgcgcgcgcgcgcgcgc	137497
voltage-gated chloride channel					
2827	CLCN2	NM_004366.2	2437	ctgcgcgcgcgcgcgcgcgcgc	263258
2828	CLCN2	NM_004366.2	2439	gcgcgcgcgcgcgcgcgcgcgc	263259
2829	COL12A1	NM_004370.4	301	gcgcgcgcgcgcgcgcgcgcgc	297699
2830	COL12A1	NM_004370.4	6370	gcgcgcgcgcgcgcgcgcgcgc	287853
2831	COL12A1	NM_004370.4	6371	gcgcgcgcgcgcgcgcgcgcgc	287854
2832	COL12A1	NM_004370.4	6373	gcgcgcgcgcgcgcgcgcgcgc	287855
2833	COPA	NM_004371.2	2752	gcgcgcgcgcgcgcgcgcgcgc	169779
2834	COPA	NM_004371.2	3951	gcgcgcgcgcgcgcgcgcgcgc	169800
2835	CRABP1	NM_004378.1	104	gcgcgcgcgcgcgcgcgcgcgc	173398
transcription_regulat					
2836	CREB1	NM_004378.2	785	gcgcgcgcgcgcgcgcgcgcgc	2399
2837	CREB1	NM_004378.2	842	gcgcgcgcgcgcgcgcgcgcgc	2401
2838	CREB1	NM_004378.2	994	gcgcgcgcgcgcgcgcgcgcgc	2408
transcription_regulat					
2839	CREB1	NM_004381.3	984	gcgcgcgcgcgcgcgcgcgcgc	24607
gpcr					
2840	CRHR1	NM_004382.2	795	gcgcgcgcgcgcgcgcgcgcgc	242048
2841	CSK	NM_004383.1	431	gcgcgcgcgcgcgcgcgcgcgc	77617
2842	CSK	NM_004383.1	434	gcgcgcgcgcgcgcgcgcgcgc	77618
2843	CSK	NM_004383.1	789	gcgcgcgcgcgcgcgcgcgcgc	77623

epilepsy(てんかん), myoclonic epilepsy(ミョクロナイック・エPILEPSY)

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図46 (続き)

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2944	CSNK1G3	NM_004384.1	184	ggcaattttgagcaatbcagatt	77705	79329	kinase, related, signal transduction	protein serine/threonine kinase	-
2945	CSNK1G3	NM_004384.1	998	atgccttgatgagcaacatttg	77730	48895	see also 2944 line	-	-
2946	CSNK1G3	NM_004384.1	1049	atccctctctgctctcaacacaga	77731	48897	see also 2944 line	-	-
2947	CSNK1G3	NM_004384.1	1208	tacagatttgaagctctcaacaat	77735	49900	see also 2944 line	-	-
2948	CSPG2	NM_004385.2	1235	aaacccctgctatcttgataaac	140996	546665	-	lectin	Alzheimer disease(アルツハイマー病)
2949	CSPG2	NM_004385.2	4300	atccatagatgagcaatctaa	141092	546669	see also 2948 line	-	-
2950	CSPG2	NM_004385.2	9824	agcggagacacactgaacttga	141241	546816	see also 2948 line	-	-
2951	CTNNA2	NM_004389.1	2518	ggggcagcagctgctcaacttc	287025	660477	-	structural constituent of cytoskeleton	-
2952	CYP8B1	NM_004391.1	465	tgtctctccggaagaatagtgtt	221144	609201	-	steroid hormone receptor	-
2953	DACH	NM_004392.2	1234	ggctctgagacactctcaacaga	310561	676504	-	-	-
2954	DNC11	NM_004411.1	528	cagcgcactctggccctcaataca	293916	534644	-	-	-
2955	DNC11	NM_004411.1	530	ggcgcactctggccctcaatacaag	293917	534645	see also 2954 line	-	-
2956	DNM12	NM_004412.3	1058	tacttaaacgagcaatatttacct	25427	458564	-	-	-
2957	DUSP1	NM_004417.2	858	atcaaatgctcagccaatgtctcc	195078	588306	-	phosphatase, kinase, related, cell cycle	-
2958	ECM1	NM_004425.2	613	ggcgcctctccagcaactctcga	260490	644044	kinase related	USF43/USF44 complex	lipid proteinosis of Urbach and Wiethe(脂肪タン パク症)
2959	PHC2	NM_004427.2	418	ccccccagcaatgctgagaataaa	134635	538642	-	-	-
2960	PHC2	NM_004427.2	463	ccccaaatctgagcagctatttcc	134637	538643	see also 2959 line	-	-
2961	PHC1	NM_004427.2	468	atctcagcagctgattctgaagg	134638	538644	see also 2959 line	-	-
2962	EFNA1	NM_004428.2	471	agggacagcagctactcctcactct	171737	694574	-	-	-
2963	EGR3	NM_004430.2	865	ggcctattccccccaggaattacc	2967	459042	transcription, regulat or	transcription factor or	-
2964	ELAVL2	NM_004432.1	780	ggctcttgtaagctctgaagaaga	47566	473710	transcription, regulat or	transcription, regulat UTR	-
2965	ELAVL2	NM_004432.1	1076	atcaagagctctagagctattcttc	47578	473723	see also 2964 line	-	-
2966	ELAVL2	NM_004432.1	1080	aaagctgagctctatgagctatttc	47579	473724	see also 2964 line	-	-
2967	ELAVL2	NM_004432.1	1081	ggagctgagctctatgagctatttc	47580	473725	see also 2964 line	-	-
2968	ELAVL2	NM_004432.1	1087	taagcttctgagctctatgagctatttc	47581	473727	see also 2964 line	-	-
2969	ELAVL2	NM_004432.1	1451	ggatctccctggcaaacatttg	47586	473742	see also 2964 line	-	-
2970	EPHA4	NM_004438.2	1358	gagccacccatcatctattgtcttg	81468	501768	-	ephrin receptor	-
2971	EPHA4	NM_004438.2	2919	cagccacccagcaatgattgttga	81492	501743	see also 2970 line	-	-
2972	EPHA5	NM_004438.3	1700	ttcagctgagagcttgaattgttga	81532	501772	receptor, activity, kinase, related, signal transduction	-	-
2973	EPHA5	NM_004438.3	1884	tgcgcactcccaactcactcattaga	81534	501775	see also 2972 line	-	-

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2974	EPHA7	NM_004440.2	295	cgagctctgcgaagctgctctct	81557	501894	receptor activity, signal transduction	ephrin receptor	-
2975	EPHA7	NM_004440.2	464	agctcgcgagctgaactgcttcttc	81563	501901	see also 2974 line	-	-
2976	EPHA7	NM_004440.2	772	cgagctcgtgagctcctctctagc	81572	501912	see also 2974 line	-	-
2977	EPHA7	NM_004440.2	1709	cgagctccatcaatcaatctgaaa	81601	501941	see also 2974 line	-	-
2978	EPHA7	NM_004440.2	1710	agctcctctcaatctctgcaac	81602	501942	see also 2974 line	-	-
2979	EPHA7	NM_004440.2	2050	acctatgtaggcacccaatgagcgc	81613	501951	see also 2974 line	-	-
2980	EPHB1	NM_004441.2	2937	cgagctctcgcgcctctaccacc	81689	502033	receptor activity, signal transduction	ephrin receptor	-
2981	EP-S8	NM_004447.3	545	aagcttgagctcgaagatgatgtt	248437	696421	signal transduction	SH3/SH2 adaptor	-
2982	EP-S8	NM_004447.3	549	gtgagctcaagatgatctcttc	248438	696423	see also 2981 line	protein	-
2983	EP-S8	NM_004447.3	758	aggttaggcgaacctaatgtt	248444	696426	see also 2981 line	-	-
2984	ERG	NM_004448.2	661	aactctccagctgtaatgcagtc	3401	443464	transcription, regulat or,	-	leukemia (白血病), Ewing sarcoma (ユ ーイング肉腫), Ewing's tumour (ユーイング腫瘍)
2985	ETFDH	NM_004453.1	1403	tggagctcctgaactgaactgaat	225783	614140	signal transduction	electron- transferring flavoprotein	-
2986	ETFDH	NM_004453.1	1404	aggctctctgaactgaactgatg	225784	614141	see also 2985 line	glutaricaciduria (グルタル酸尿症)	-
2987	ETFDH	NM_004453.1	1418	cgagatctgagcacttcttaag	225785	614143	see also 2985 line	-	-
2988	ETFDH	NM_004453.1	1692	aggtgagctactgaactgagctg	225797	614156	see also 2985 line	-	-
2989	ETFDH	NM_004453.1	1695	tggagctactgaactgagctgacc	225798	614157	see also 2985 line	-	-
2990	EZH2	NM_004456.3	205	tgtgtgcgcgagcgtgtgaaat	26359	459433	-	-	-
2991	EZH2	NM_004456.3	292	tgtgtccactctcgagaaatt	26361	459437	see also 2980 line	-	-
2992	EZH2	NM_004456.3	543	ctgtttccatactcactctctctt	26368	459451	see also 2980 line	-	-
2993	EZH2	NM_004456.3	847	tctctcaattcttcctgtaag	26377	459458	see also 2980 line	-	-
2994	EZH2	NM_004456.3	1416	ctcagctgcgaacacctataag	26387	459469	see also 2980 line	-	-
2995	EZH2	NM_004456.3	1564	acactgtgacagctgtatgagt	26391	459477	see also 2980 line	-	-
2996	EZH2	NM_004456.3	1597	atgtgagcagctgtatgatttt	26392	459478	see also 2980 line	-	-
2997	EZH2	NM_004456.3	1713	acgctctctcaactctgtttac	26395	459479	see also 2980 line	-	-
2998	EZH2	NM_004456.3	1951	cgtcgcctcagcagcagtaaaa	26396	459488	see also 2980 line	-	-
2999	EZH2	NM_004456.3	1953	ctgacccatggagcagctataaat	26397	459489	see also 2980 line	-	-
3000	EZH2	NM_004456.3	2268	atgcgaataatctatgattgtaac	26408	459505	see also 2980 line	-	-
3001	FACL4	NM_004458.1	543	aagtaattcttggagattaaa	165617	563167	-	-	mental retardation (精神遅滞)
3002	FACL4	NM_004458.1	1056	gtgtatgatactatgatactttt	165638	563181	see also 3001 line	-	-
3003	FACL4	NM_004458.1	1121	agagccagagccacactatatta	165641	563185	see also 3001 line	-	-
3004	FACL4	NM_004458.1	1168	tggagccagcagcagagtaact	165642	563187	see also 3001 line	-	-
3005	FACL4	NM_004458.1	1535	tctgagacacacagctatcaga	165654	563202	see also 3001 line	-	-
3006	FACL4	NM_004458.1	1837	cttgagacacacagctatcaga	165655	563203	see also 3001 line	-	-
3007	FACL4	NM_004458.1	1539	cagcagccagcagctatgaggt	165656	563204	see also 3001 line	-	-

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3008	FAGL4	NM_004458.1	1541	gaacacgcgcctgaactgaact	15557	553205	see also 3001 line			
3009	FAGL4	NM_004458.1	1800	cagatcacagctcgaagaata	155971	553218	see also 3001 line			
3010	FAP	NM_004460.2	571	tactctcctctgagdaatt	183459	571726	-	prolyl	insaroma(マラノーマ)	
3011	FAP	NM_004460.2	613	gtccctcctgaggaactgaag	183460	571727	see also 3010 line			
3012	FDT11	NM_004462.2	217	tgtcacagatcactcaatga	155763	553240	-	oxidoreductase	-	
3013	FGD1	NM_004463.2	1052	gggaacgcgcctcactgttaaa	156797	557695	signal transduction		mental retardation(精神遅滞), facio-genital dysplasia(顔面性器形成不全), Aarskog-Scoot syndrome(Aarskog-Scoot症候群)	
3014	FGD1	NM_004463.2	1058	ccgcctcctctgaagaattgt	156798	557698	see also 3013 line			
3015	FGD1	NM_004463.2	1984	tgttcctcgcctcactctatac	156803	557705	see also 3013 line			
3016	FGD1	NM_004463.2	1987	tcacagcctcctcttaacatc	156804	557706	see also 3013 line			
3017	FGD1	NM_004463.2	2634	agctcgtcgcgcacgttatgt	156815	557725	see also 3013 line			
3018	FGD1	NM_004463.2	2637	gtctcgtcgcgcacgttatgaa	156816	557726	see also 3013 line			
3019	FGD1	NM_004463.2	2639	ccgcgcacgttatgttatgag	156817	557727	see also 3013 line			
3020	FGD1	NM_004463.2	2640	cgttcgcgcacgttatgtatgag	156818	557728	see also 3013 line			
3021	FGF5	NM_004464.2	457	taccctcgtctgcaactcaatg	169144	565566	signal transduction			
3022	FGF5	NM_004464.2	529	caaggaatctgactcaatcagag	169150	565580	see also 3021 line			
3023	FGF5	NM_004464.2	539	taggatatactgagatttttagc	169151	565581	see also 3021 line			
3024	FGF10	NM_004465.1	193	agcactgtctcgcctcacaaac	169028	565914	signal transduction			
3025	FLOT2	NM_004475.1	159	agccctcctcctcgcctctaac	319055	653493	or	growth factor	-	
3026	FLOT2	NM_004475.1	160	acgcgcgcgcgcgcgcctttaac	319056	653494	see also 3025 line			
3027	FLOT2	NM_004475.1	161	cgcgcgcgcgcgcgcgcctttaac	319057	653495	see also 3025 line			
3028	FOLH1	NM_004476.1	798	tgcctcgcactgaactctcttta	183738	577603	-	serine-type endopeptidase	-	
3029	FRG1	NM_004477.1	925	tgcacagagagacacaaattgaa	314795	704395	-	-	-	
3030	FUT8	NM_004480.3	1129	ctcgaatagtcgcctatgtcctc	210747	599637	-	-	-	
3031	FUT8	NM_004480.3	1455	ggctcaaacctcgcacttatgtt	210755	599644	see also 3030 line			
3032	FUT8	NM_004480.3	1666	atgaattttttttgtatcaact	210761	599650	see also 3030 line			
3033	GALNT2	NM_004481.2	51	gggcctcgcctcactctatcctc	210966	606538	-	-	-	
3034	GALNT2	NM_004481.2	963	ggcgagtcgcactcactgatgag	210962	606551	see also 3033 line			
3035	GALNT3	NM_004482.2	644	tgtgtgtgtatctgtctgtatgaa	211022	606578	-	-	-	
3036	GALNT3	NM_004482.2	1044	aagaaagaagatgaanaactaac	211036	606586	see also 3035 line			
3037	GALNT3	NM_004482.2	1486	gtgtatgtccctcgccttaaac	211044	606603	see also 3035 line			
3038	GALNT3	NM_004482.2	1494	ccgcacgccttaactcctttat	211045	606604	see also 3035 line			
3039	GALNT3	NM_004482.2	1496	cagacttaactcctttatcct	211046	606605	see also 3035 line			
3040	GPC3	NM_004484.2	790	agcaagcactgaactgaagatc	310629	664905	receptor activity			neuroblastoma(神経芽細胞腫), Simpson-Golabi-Bellml overgrowth syndrome(Simpson-Golabi-Bellml過成長症候群), Wilms tumor(ウィルムス腫瘍), Simpson-Golabi-Bellml Syndrome(Simpson-Golabi-Bellml症候群)

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3041	GPC3	NM_004484.2	1107	tggtgagctgcctatcagaactc	310638	684917	see also 3040 line		
3042	GPC3	NM_004484.2	1759	tgagagctgcctatcagctcga	310662	684937	see also 3040 line		
3043	GF72A2	NM_004492.1	245	aggtcttactcactcattgtag	4530	816107		RNA polymerase II	
3044	HDGF	NM_004493.1	432	atcacacgcacacacacacacg	169233	568033	signal transduction	transcription factor	
3045	HDGF	NM_004494.1	671	cagagagctgagctgtagagag	169234	568035	see also 3044 line	hsp90 binding	
3046	FOX43	NM_004497.2	1190	tgggagcctcggcttactctcc	4018	443909	transcription_regulat	translation	
3047	ONECUT1	NM_004498.1	1316	gcctcgacactcactcgaatatt	8765	447510	transcription_regulat	regulator	
3048	ONECUT1	NM_004498.1	1318	gcctgaactcactcgaatattc	8766	447511	or	regulator	
3049	ONECUT1	NM_004498.1	1319	tgacactctactcgaatattca	8767	447512	see also 3047 line		
3050	HNRPAB	NM_004499.2	415	aggagacgcggcgaaatgttcc	52014	460295			
3051	HNRPAB	NM_004499.2	629	ccgtgtcattgcaccca aaagc	52022	460301	see also 3050 line		
3052	HNRPAB	NM_004499.2	1004	tggagctcagatgtaccacact	52030	460306	see also 3050 line		
3053	HNRP1	NM_004501.2	1891	aactcactggcttactaacatg	28614	480353			
3054	HOXC6	NM_004503.2	174	tccccaacgcgcctcaattcc	5181	444817	transcription_regulat		
3055	HOXC6	NM_004503.2	257	atctctcactcactctttatttc	5183	444819	see also 3054 line		
3056	HOXC6	NM_004503.2	317	ccctatctcactcactctatttc	5184	444821	see also 3054 line		
3057	HOXC6	NM_004503.2	404	acctcaactgcctcaggattttag	5186	444824	see also 3054 line		
3058	HRB	NM_004504.3	418	aggatctcaaaagatgaaagga	28574	480451		RNA binding	
3059	HRB	NM_004504.3	743	cagctcagcgcctcatttgcacac	28578	480455	see also 3058 line		
3060	HRB	NM_004504.3	744	agctcagcgcctcatttgcacac	28579	480458	see also 3058 line		
3061	HRB	NM_004504.3	840	ggcatctgttcggatgatttgc	28681	480460	see also 3058 line		
3062	HRB	NM_004504.3	1080	agcactgtcctattgacacata	28689	480469	see also 3058 line		
3063	HSF2	NM_004506.2	617	agagatttcactgtttattgtac	5351	444916	transcription_regulat	translation	
3064	HSF2	NM_004506.2	673	acctaaagagcctcactctaa	5353	444920	see also 3063 line	regulator	
3065	ILK	NM_004517.1	625	cagaactcacaacctattcacta	85718	504293	kinase, related,	protein	
3066	KCNQ3	NM_004519.2	1505	tgcagctggttcgctctctaat	261084	644518	channel	serine/threonine	
3067	KCNQ3	NM_004519.2	1526	atctctcgtgtgactactcaaaa	261066	644519	see also 3066 line	kinase	
3068	KCNQ3	NM_004519.2	1527	tccctctgtgtgactactcaaaa	261067	644520	see also 3066 line		
3069	KCNQ3	NM_004519.2	1552	agcacttctccctcctctaaatt	261071	644521	see also 3066 line		
3070	KCNQ3	NM_004519.2	2074	agcactcttctggaattttttaa	261087	644532	see also 3066 line		
3071	KCNQ3	NM_004519.2	2258	ccatttttaaacactctctcgc	261090	644536	see also 3066 line		
3072	KIF2	NM_004520.1	456	agctatgcgaagcagagactc	87253	505689		motor	
3073	KIF2	NM_004520.1	1689	cagagagcgtgcataaactctt	87279	505744	see also 3072 line		
3074	KIF2	NM_004520.1	1701	gaagagatgcataaactcttct	87280	505745	see also 3072 line		
3075	KU-95	NM_004521.1	596	atcgagggtgtaactactgattcc	8732	505938			
3076	KU-95	NM_004521.1	615	atcccaagatgcattggaattatt	8733	505939	see also 3075 line	microtubule motor	

benign familial neonatal convulsions(-), epilepsy(アブカ)

3106	PKFB4	NM_004587.2	515	tcccaactctccaggaac	96640	621814	kinase related, phosphatase	fructose-2, 6-bisphosphate 2-phosphatase	-
3107	PK3C2G	NM_004570.2	2815	tccactgaattactttcattc	207123	597158	kinase related	phosphatidylinositol 1,3-kinase, class	-
3108	PK3C2G	NM_004570.2	2816	gcctcagagctctctctca	207124	597159	see also 3107 line	-	-
3109	PK3C2G	NM_004570.2	4191	gcctcagagctcagattgaatt	207162	597192	see also 3107 line	-	-
3110	PKNOX1	NM_004571.3	209	aattatagacgctatcagatg	9365	441316	transcription regulator	-	-
3111	PNUTL2	NM_004574.2	929	cgcgcactgattgttgaacca	109850	520433	cell cycle, or	-	-
3112	PNUTL2	NM_004574.2	1389	aaggaacagatgcacacaaact	109856	520450	see also 3111 line	melanoma(メラノーマ)	-
3113	PNUTL2	NM_004574.2	1393	aacgaagaatgcacaaactgaact	109857	520451	see also 3111 line	-	-
3114	PPP2R2B	NM_004576.2	707	tctctctgaggttgatatacaat	298688	666252	phosphatase, signal transduction	-	-
3115	PPP2R2B	NM_004576.2	711	tctgaggttgatatacaattgtt	298689	666253	see also 3114 line	-	-
3116	PPP2R2B	NM_004576.2	1394	gccacagctggaggttatatacag	298708	666266	see also 3114 line	-	-
3117	RAB4A	NM_004578.2	494	acacgcgaacaaacctacaactg	110310	520120	signal transduction	protein transporter	-
3118	RAB4A	NM_004578.2	505	aacctacaactgcgctctcaatt	110311	520121	see also 3117 line	-	-
3119	RAB27A	NM_004580.3	472	caggcagaagctgaggtttctgagc	110077	519892	signal transduction	-	-
3120	RPS8K43	NM_004586.1	18	ggcgcgaccctctccagaagatgg	98764	514239	kinase related, signal transduction	protein tyrosine kinase	Coffin-Lowry syndrome(-), diabetes mellitus(糖尿病), mental retardation(精神遅滞), diabetes(糖尿病)
3121	RPS8K43	NM_004586.1	342	gacaaatctatccatctctatctct	98768	514243	see also 3120 line	-	-
3122	RPS8K43	NM_004586.1	886	caagatcttttttcgagtgctttt	98780	514256	see also 3120 line	-	-
3123	RPS8K43	NM_004586.1	1139	agctcttttcagagcttggatgtttt	98786	514263	see also 3120 line	-	-
3124	RPS8K43	NM_004586.1	1491	aggaagtgaaatctcggagaaag	98796	514271	see also 3120 line	-	-
3125	RPS8K43	NM_004586.1	1665	atctatctgaatttgcattgtttg	99802	514287	see also 3120 line	-	-
3126	RPS8K43	NM_004586.1	1966	gtctcaagaagctctcatctatga	99813	514301	see also 3120 line	-	-
3127	SSA2	NM_004600.3	1158	aagctctctatcatctcatctca	54951	475665	transcription regulator or	RNA binding	Sjogren syndrome(シェーグレン症候群)
3128	SSA2	NM_004600.3	1160	ggctctatcatctcatctcatca	54952	475666	see also 3127 line	-	-
3129	SSA2	NM_004600.3	1762	tggatgttgcgctgttgatact	54963	475683	see also 3127 line	-	-
3130	STAU	NM_004602.1	1646	gccacagccgagaccattctaa	48776	472183	see also 3130 line	-	-
3131	STAU	NM_004602.1	1647	gccacagccgagaccattctaa	48777	472184	see also 3130 line	-	-
3132	STAU	NM_004602.1	1649	cacagccgagaccattctaaaga	48778	472185	see also 3130 line	-	-
3133	TGFB1	NM_004612.1	256	gaccacagccaaagctatcacca	102515	516315	receptor activity, kinase related, growth factor-beta	type I transforming growth factor-beta receptor	-
3134	TGFB1	NM_004612.1	904	ctgtgtgtgtctcagattatctg	102541	516339	see also 3133 line	-	-
3135	TOP3A	NM_004618.2	1473	ctctccattcccccacaaataac	42796	469782	-	USF4/USF4 complex	pancreatic cancer(膵臓癌)
3136	TPAF6	NM_004620.2	1446	ctcagcgcgcgcacacatctata	87026	468995	signal transduction	Smith-Magenis syndrome chromosome region(Smith-Magenis症候群染色体部位)	-
3137	TPAF6	NM_004620.2	1448	cacgcgcgcgcacacatctatctc	87027	468996	see also 3136 line	-	-

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3138	TRAF6	NM_004620.2	1527	aggatcaatccgcttcacatt	67029	487001	see also 3138 line		
3139	TRAF6	NM_004620.2	1528	ttatcaaatccgcttcacatt	67030	487002	see also 3138 line		
3140	TRAF6	NM_004620.2	1531	ttatcaaatccgcttcacatt	67031	487003	see also 3138 line	non-selective cation channel	-
3141	TRPC6	NM_004621.3	1808	tggagatgctctattatcctgg	261863	645090	channel		
3142	TRPC3	NM_004621.3	1825	tctctggttaagagctgctatg	281864	645092	see also 3141 line		
3143	WNT11	NM_004622.2	1925	tctctggttaagagctgctatg	235418	639571	signal transduction	signal transducer	-
3144	FANCG	NM_004629.1	1258	cacccgaagctgggaatcacca	16272	678757	cell cycle		-
3145	SFI	NM_004630.1	1950	tgcctatggcgaataatcgaag	54694	470999	transcription_regulat or		-
3146	LRP8	NM_004631.2	1880	cccccctggagagcttatgcttt	147953	537284	receptor activity,		-
3147	DAP3	NM_004632.2	617	tacaacaacagcgtttgatca	285443	658280	apoptosis		-
3148	BRP1	NM_004634.1	3304	atgcgagagctatcctcatcacc	23107	456735	transcription_regulat regulator		-
3149	MAPKAP1 3	NM_004635.3	1126	ggccaatctggagctgagctacg	30128	493610	kinase related,		-
3150	BAT2	NM_004638.2	503	tgggtccaagcagcgaataagctcc	332653	709575	signal transduction		-
3151	BAT2	NM_004638.2	762	cccgagctccaagaactctcatg	332655	709577	see also 3150 line		-
3152	BAT2	NM_004638.2	1086	ggccacataaagcttactctata	332664	709588	see also 3150 line		-
3153	BAT3	NM_004639.2	3580	ggccacataaagcttactctata	304866	532558			-
3154	BAT1	NM_004640.3	1014	tgcctacctggcgaagagagctc	49793	481475			-
3155	MLLT10	NM_004641.1	215	aggagcagagcttcccatgctg	6956	481797	transcription_regulat		-
3156	MLLT10	NM_004641.1	218	acgagctctctctatgctgag	6957	481798	transcription factor	leukemia(白血病)	-
3157	MLLT10	NM_004641.1	572	agatgctctataaagactctgc	6963	481811	see also 3155 line		-
3158	MLLT10	NM_004641.1	636	tggctgctgctgagcagctgata	6966	481812	see also 3155 line		-
3159	MLLT10	NM_004641.1	638	tgcctgctgctgagcagctgata	6967	481813	see also 3155 line		-
3160	MLLT10	NM_004641.1	639	tgcctgctgctgagcagctgata	6968	481814	see also 3155 line		-
3161	MLLT10	NM_004641.1	642	tgcctgctgctgagcagctgata	6969	481815	see also 3155 line		-
3162	MLLT10	NM_004641.1	746	tccatctatgctgctgctgataa	6977	481821	see also 3155 line		-
3163	PABPN1	NM_004643.1	2115	ctcgattctacagtggttttaac	53195	485345		oculopharyngeal muscular dystrophy(眼球咽頭 型筋ジストロフィ)	-
3164	COIL	NM_004645.1	39	cgttgagctgctgcttccatatt	324043	533869		ubiquitin C- terminal hydrolase	-
3165	USP11	NM_004651.2	1147	aagaaacaggtttgccattttgc	188792	582840			-
3166	USP9X	NM_004652.2	605	tacatccatctgaatcagttt	190480	583957			-
3167	USP9X	NM_004652.2	2567	aagaaacaggtttgccattttgc	190505	583909	see also 3166 line		-
3168	USP9X	NM_004652.2	3246	agagcagcttgaatcagttttgc	190520	583932	see also 3166 line		-
3169	USP9X	NM_004652.2	4147	aaacatgagcagcagcttctct	190534	583958	see also 3166 line		-
3170	USP9X	NM_004652.2	4149	caatagagcagcagcttctct	190535	583957	see also 3166 line		-
3171	USP9X	NM_004652.2	4153	cagagcagcttctctctctctta	190537	583959	see also 3166 line		-
3172	USP9X	NM_004652.2	4154	ggcagcagcttctctctctctta	190538	583959	see also 3166 line		-

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3173	USP9X	NM_004652.2	4155	ggccgactctctctctctttag	190539	583960	see also 3186 line		
3174	USP9X	NM_004652.2	4806	ggccacgactggtctcttaga	190557	583975	see also 3186 line		
3175	USP9X	NM_004652.2	6245	ttgctctgctgctctctctctt	190574	583914	see also 3186 line		
3176	USP9X	NM_004652.2	6467	tggctctgctgctctctctctt	190578	583915	see also 3186 line		
3177	USP9X	NM_004652.2	6501	ccctctctctctctctctctctt	190579	583920	see also 3186 line		
3178	USP9X	NM_004652.2	7132	accgagctgctgctctctctctt	190582	583940	see also 3186 line	RNA binding	
3179	DDX3Y	NM_004660.2	1233	cgagctgctgctgctctctctt	24920	483048			
3180	CD223	NM_004661.2	524	tgcgctgctctctctctctctt	302744	801154	cell cycle		
3181	CD223	NM_004661.2	626	tgcgctgctctctctctctctt	302766	801173	see also 3180 line		
3182	CD223	NM_004661.2	1562	gtgagccgcaaaagctgctttag	302273	801179	see also 3180 line		
3183	CD223	NM_004661.2	1565	tggccctctctctctctctctt	302274	801180	see also 3180 line		
3184	RAB11A	NM_004663.3	210	ctctctgcttactctgaaatga	109892	519861		protein transporter	
3185	RAB11A	NM_004663.3	214	ctctgattctctgaaatgaatt	109884	519862	see also 3184 line		
3186	RAB11A	NM_004663.3	251	tcgattctctgaaatgaattctta	109885	519863	see also 3184 line		
3187	RAB11A	NM_004663.3	561	aaagatgctgctctctctcttga	109892	519875	see also 3184 line		
3188	HERC2	NM_004667.2	537	ttcagagaaatgctcaagtttag	229599	616188			
3189	HERC2	NM_004667.2	1306	gaactctctgaaagctctctctc	229600	616195	see also 3188 line		
3190	HERC2	NM_004667.2	1334	gtctatgctgctgagctctcttag	229601	616196	see also 3188 line		
3191	HERC2	NM_004667.2	2082	aaagctgctcaagctctctctctg	229610	616208	see also 3188 line		
3192	PAPSS2	NM_004670.2	1517	ggctctctgctatcccaagctcaac	95768	511319	kinase related	sulfate adenyltransferase	spondyloepimetaphyseal dysplasia (骨軟骨發育不全症)
3193	MIZ1	NM_004671.1	70	ggcttctctgctccgctctgcttag	32313	461727		(ATP)	
3194	MIZ1	NM_004671.1	144	ctgagccctctgctctctgcttag	32317	461731	see also 3193 line		
3195	MIZ1	NM_004671.1	148	agccctctgctctctgctctgcttag	32320	461732	see also 3193 line		
3196	MIZ1	NM_004671.1	149	ggctctgctctctgctctgcttag	32321	461733	see also 3193 line		
3197	MIZ1	NM_004671.1	150	ccctctgctctctgctctgcttag	32322	461734	see also 3193 line		
3198	MIZ1	NM_004671.1	428	atctctgctctctgctctgcttag	32329	461741	see also 3193 line		
3199	MIZ1	NM_004671.1	478	ctctctgctctctgctctgcttag	32330	461742	see also 3193 line		
3200	MIZ1	NM_004671.1	484	aaagccacgctctgctctgcttag	32331	461744	see also 3193 line		
3201	MIZ1	NM_004671.1	485	agccacagctctgctctgcttag	32332	461745	see also 3193 line		
3202	MIZ1	NM_004671.1	892	cgactctctctgctctgcttag	32353	461758	see also 3193 line		
3203	MIZ1	NM_004671.1	1027	tcctctctgctctctgcttag	32356	461764	see also 3193 line		
3204	MIZ1	NM_004671.1	1497	cccaacacagctctgctctgcttag	32365	461774	see also 3193 line		
3205	MIZ1	NM_004671.1	1587	cccaacacagctctgctctgcttag	32366	461777	see also 3193 line		
3206	MIZ1	NM_004671.1	1689	cgctctctctgctctgcttag	32371	461778	see also 3193 line		
3207	MAP3K6	NM_004672.2	2095	tgagctctctgctctgcttag	89545	507379		transcription regulat	
3208	ASH2L	NM_004674.1	582	aaagataagctctctgctcttag	332772	703113	or		
3209	ASH2L	NM_004674.1	1161	atgctctctctgctctgcttag	332780	703125	see also 3208 line		
3210	ASH2L	NM_004674.1	1611	ctctctctctgctctgcttag	332789	703138	see also 3208 line		
3211	RGN	NM_004683.3	864	gtctctctctgctctgcttag	152041	553004			
3212	RGN	NM_004683.3	867	aaagctctctctgctctgcttag	152042	553005	see also 3211 line		

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3213	MTNR6	NM_004685.2	1191	aagagctcttcgaagcttcc	195311	586602	phosphatase	protein serine/threonine phosphatase	-
3214	MTNR6	NM_004685.2	1233	cgagagctcttcgaagcttcc	195312	586603	see also 3213 line	-	-
3215	MTNR4	NM_004687.3	283	tccctccctcgatgctgctgctg	158503	559011	phosphatase	-	-
3216	MTNR4	NM_004687.3	1182	tccgctctcgatgctgctgctg	158516	559011	see also 3215 line	-	-
3217	MTNR4	NM_004687.3	3625	agctcgagaacacctctctctcga	158558	559063	see also 3215 line	-	-
3218	MTA1	NM_004689.2	1065	aagtttattatctccaaactaac	7117	446002	transcription_regulat or,	transcription factor	-
3219	SLC16A4	NM_004690.1	665	ggccacctctccaaactctctga	257394	760569	-	symporter	-
3220	PRPF3	NM_004698.1	1308	tggatctcaaatctctctgagc	46510	729836	-	cyclin-dependent protein kinase, regulator	retinitis pigmentosa (色素性網膜炎)
3221	QCNB2	NM_004701.2	166	cccgagctgtctcgaagtcttgc	307138	673626	cell cycle	-	-
3222	RABEP1	NM_004703.2	212	tccagcagctgctgcttctctga	1694703	566180	-	-	-
3223	RABEP1	NM_004703.2	1444	atccaaactcttgagctataact	169495	566208	see also 3222 line	-	-
3224	RABEP1	NM_004703.2	1449	aagctcttgagctataactcaaa	169496	566207	see also 3222 line	-	-
3225	RABEP1	NM_004703.2	1530	caactctgaagaactcttgaact	169498	566210	see also 3222 line	-	-
3226	RABEP1	NM_004703.2	1733	aactctgagctgcttctgtag	169510	566218	see also 3222 line	-	-
3227	RABEP1	NM_004703.2	1712	aacctctgagctgcttctgtag	169515	566221	see also 3222 line	-	-
3228	PRKRR	NM_004705.2	115	agagagcaactctgaagactaa	37034	690545	signal transduction	protein binding	-
3229	PRKRR	NM_004705.2	230	tccagatgactgaagctcaaca	37042	690553	see also 3228 line	-	-
3230	PRKRR	NM_004705.2	237	tgtatcttcagcagcttctgac	37043	690554	see also 3228 line	-	-
3231	SDCCAG1	NM_004713.2	323	gaagatgactgctctgaagaagc	332754	716345	-	colorectal cancer (大腸癌), colorectal cancer (結腸直腸癌)	-
3232	SDCCAG1	NM_004713.2	1847	tggcaactgactgctctgctctca	332797	716393	see also 3231 line	-	-
3233	SDCCAG1	NM_004713.2	1904	tctctgagctgctgctctgctca	332801	716397	see also 3231 line	-	-
3234	SDCCAG1	NM_004713.2	2011	atcctgaagctgctgctgctctc	332805	716401	see also 3231 line	-	-
3235	DYRK1B	NM_004714.1	450	agcacatcaatgctgcttactact	80972	500960	kinase, related	-	-
3236	DYRK1B	NM_004714.1	462	agcttactactctgcaagaagag	80973	500962	see also 3235 line	-	-
3237	PCSK7	NM_004716.2	1017	ggcttctcaacaacactctctaga	183170	576850	-	subtilase	-
3238	ARHGEF2	NM_004723.2	255	tccacaacccctctgaagcacc	172126	697376	signal transduction	guanyl-nucleotide release factor	-
3239	ARHGEF2	NM_004723.2	952	gagtcaccccggaactctgtcctc	172133	697383	see also 3238 line	-	-
3240	DDX21	NM_004728.1	1251	tggacctgctgctgaaagaagct	50674	473484	-	ATP dependent RNA helicase	-
3241	DDX21	NM_004728.1	1488	gggaatacactcctgaagctgtt	50680	473491	see also 3240 line	-	-
3242	EIF1	NM_004730.1	327	acagatgaacccctcttcaatcc	51443	477889	-	translation release factor, codon specific	-
3243	EIF1	NM_004730.1	630	aagagaactcctccacaactca	51457	477902	see also 3242 line	-	-
3244	EIF1	NM_004730.1	697	tgcgtttccctcttgaagat	51458	477904	see also 3242 line	-	-
3245	EIF1	NM_004730.1	688	tgcgtttccctcttgaagag	51459	477905	see also 3242 line	-	-
3246	EIF1	NM_004730.1	921	tggatctcaacacagctatgctg	51466	477910	see also 3242 line	-	-

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3247	EIF1	NM_004730.1	1369	atcttcggtatccgaagatgatt	51483	477927	see also 3242 line		
3248	EIF1	NM_004730.1	1374	ccgagctccgagtgattttccagg	51484	477928	see also 3242 line		
3249	SLC16A7	NM_004731.3	1044	agagcttcctccgagtgatttgaag	257473	641031	-	symporter	-
3250	SLC33A1	NM_004732.2	1519	ttggagcttcctccgagtgatttgaag	273097	705800	-	-	-
3251	SLC33A1	NM_004732.2	1563	ttggagcttcctccgagtgatttgaag	273098	705803	see also 3250 line	-	-
3252	SLC33A1	NM_004732.2	1719	aacatccctgagcttttbaata	273111	705814	see also 3250 line	-	-
3253	DCAMK1	NM_004734.1	1480	tccpaggccaaagacacatgatcc	77997	499455	kinase related	receptor signaling	-
							receptor activity,	protein	-
							gpr,		-
3254	XPRI	NM_004736.2	406	cagcgcaggtttgtctacacttca	243626	638567	signal transduction	-	-
3255	XPRI	NM_004736.2	412	aggtttgtctacacttcaagaaga	243627	638568	see also 3254 line	-	-
3256	XPRI	NM_004736.2	706	gaagttgcgccatttttactatg	243632	638575	see also 3254 line	-	-
3257	XPRI	NM_004736.2	976	atcatatcggttggtgtctctctct	243639	638580	see also 3254 line	-	-
3258	XPRI	NM_004736.2	1248	ccacacaaactttctactata	243650	638588	see also 3254 line	-	-
3259	XPRI	NM_004736.2	1249	ccacacaaactttctactata	243651	638589	see also 3254 line	-	-
3260	XPRI	NM_004736.2	1388	tggacctgattatgatactatcc	243653	638592	see also 3254 line	-	-
3261	XPRI	NM_004736.2	1973	ggcagattttgaaactcttcc	243675	638619	see also 3254 line	-	-
3262	XPRI	NM_004736.2	2209	gcacaaagatgatgatgaaga	243687	638630	see also 3254 line	-	-
3263	LARGE	NM_004737.2	634	ccacacacacacgtgatttacc	212153	600702	-	-	-
3264	LARGE	NM_004737.2	2158	ggatccacacacgtgatttacc	212159	600718	see also 3263 line	-	-
3265	VAPB	NM_004738.3	482	ttgatatttacccttgatgaaga	292743	682473	-	-	-
3266	VAPB	NM_004738.3	485	ttgatatttacccttgatgaaga	292744	682474	see also 3265 line	-	-
3267	VAPB	NM_004738.3	600	aacagagagctctatgatgata	292745	682477	see also 3265 line	-	-
3268	VAPB	NM_004738.3	663	aacacatgatgatgaataaact	292748	682479	see also 3265 line	-	-
							transcription_regulat	-	-
3269	MTA2	NM_004739.2	1289	tatgcacagttttatcatatgag	7145	446048	or	-	-
3270	MTA2	NM_004739.2	1314	aacacagagcagctgattatccagc	7146	446049	see also 3269 line	-	-
3271	MTA2	NM_004739.2	1930	ctctgcacatcatctccaagatcat	7159	446081	see also 3269 line	-	-
3272	MTA2	NM_004739.2	2114	ctctgccttcagagttcatcttca	7162	446083	see also 3269 line	-	-
							kinase related,	-	-
							transcription_regulat	-	-
3273	TPS6KAS	NM_004755.2	1418	acctctcgatttgacaattatg	99866	489938	or,	-	-
3274	IFG1BP1	NM_004756.2	584	atccgctgatgatttttaccatgta	126205	697308	kinase related	-	-
3275	PW1L1	NM_004764.2	1751	aagtaattccgaagaacaatgaag	332973	472480	-	-	-
3276	COPB2	NM_004766.1	945	agagcagatcatcttgagcttgag	125174	650989	kinase related	-	-
3277	COPB2	NM_004766.1	1177	ttgtatcatctggagatgatacttc	125182	650993	see also 3276 line	protein transporter	-
3278	COPB2	NM_004766.1	1178	ttgtatcatctggagatgatacttc	125183	650994	see also 3276 line	-	-
3279	COPB2	NM_004766.1	1183	atggagatgatactatcatcaaca	125185	650995	see also 3276 line	-	-
3280	COPB2	NM_004766.1	1249	ttgatcatctggagatgatacttc	125186	650996	see also 3276 line	-	-
3281	COPB2	NM_004766.1	1257	gccacagctcttcagcagttcttca	125187	650997	see also 3276 line	-	-
3282	COPB2	NM_004766.1	1402	atgtctgacatcttcagcagttcttca	125192	651002	see also 3276 line	-	-
3283	MMF20	NM_004771.2	641	aagttgacatcttcagcagttcttca	159288	558813	-	zinc binding	-

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							receptor activity, transcription, regulat or,	transcription co- activator	
3284	PPARBP	NM_004774.2	247	ctggaagcgtctccatcaaat	36478	451027	see also 3284 line	-	
3285	PPARBP	NM_004774.2	248	tggagcgtctccgcaaat	36479	451028	see also 3284 line	-	
3286	PPARBP	NM_004774.2	251	aagcgtctccgcaaat	36480	451029	see also 3284 line	-	
3287	PPARBP	NM_004774.2	251	accagcaagcgtctcttgg	36483	451033	see also 3284 line	-	
3288	PPARBP	NM_004774.2	411	ccactgcaagcgtctcttgg	36487	451038	see also 3284 line	-	
3289	PPARBP	NM_004774.2	712	tggcgtctccatcttgcaaa	36496	451042	see also 3284 line	-	
3290	PPARBP	NM_004774.2	828	aagcgtctccatcttgcaaa	36500	451134	see also 3284 line	-	
3291	PPARBP	NM_004774.2	1065	caagtcgaacagcgtctcttc	36507	451052	see also 3284 line	-	
3292	PPARBP	NM_004774.2	1389	ccgttcgcaagcgtctcttc	36517	451058	see also 3284 line	-	
3293	VAMP3	NM_004781.2	44	ctgcacttcgaactcttgcaaa	302754	666818	-	-	
3294	VAMP3	NM_004781.2	73	cagcaacaacatcaagtcgata	302755	666819	see also 3293 line	-	
3295	NDST3	NM_004784.1	1980	atgacgcgtctggatataca	217267	605705	-	-	
3296	NDST3	NM_004784.1	2142	aagcgcgaagacatttgct	217269	605709	see also 3295 line	-	
3297	NDST3	NM_004784.1	2256	atctctctcttgatacttc	217273	605715	see also 3295 line	-	
3298	NDST3	NM_004784.1	2300	gaattatctcttgatacaaa	217274	605716	see also 3295 line	-	
3299	NDST3	NM_004784.1	2324	aactaccacagggatgattg	217275	605718	see also 3295 line	-	
3300	TXNL	NM_004786.1	801	actctaccatctatgatatt	224744	649942	signal transduction	electron	
3301	TXNL	NM_004786.1	1011	caatccagcaacaactgact	224756	649950	see also 3300 line	transporter	-
3302	SLIT2	NM_004787.1	492	agagacattcagcgtctctaa	135081	554042	-	-	
3303	SLIT2	NM_004787.1	1102	gagacatctcagcgtctctaa	135105	554050	see also 3302 line	-	
3304	SLIT2	NM_004787.1	1360	gcctctccagcgtctctctaa	135117	554052	see also 3302 line	-	
3305	SLIT2	NM_004787.1	1668	ctctccagcgtctctctctaa	135128	554070	see also 3302 line	-	
3306	SLIT2	NM_004787.1	2818	gactctgagcgtctctctaa	135168	554114	see also 3302 line	-	
3307	SLIT2	NM_004787.1	4989	gcgcgcgaactctctctgactg	135200	554172	see also 3302 line	-	
3308	SLIT2	NM_004787.1	4700	ggcgcgaactctctctgactg	135201	554173	see also 3302 line	-	
3309	UBE4A	NM_004786.2	503	atcaagcgtctctgatactgac	235455	670449	-	ubiquitin	
3310	UBE4A	NM_004786.2	682	aagcagcgtctctgatactgac	235467	670655	see also 3309 line	conjugating	-
3311	UBE4A	NM_004786.2	809	agcaactctgatactgatttct	235470	670656	see also 3309 line	-	
3312	UBE4A	NM_004786.2	1698	caactctgactctgattgacaa	235500	670672	see also 3309 line	-	
3313	UBE4A	NM_004786.2	2012	tgctcttctgcaagcattttt	235501	670677	see also 3309 line	-	
3314	UBE4A	NM_004786.2	2134	accatttctgcaagcatttga	235509	670678	see also 3309 line	-	
3315	UBE4A	NM_004786.2	2142	cactgcaagcgtctgaaagata	235510	670679	see also 3309 line	-	
3316	UBE4A	NM_004786.2	2432	ctgcaagcgtctgaaagata	235511	670687	see also 3309 line	-	
3317	UBE4A	NM_004786.2	2456	ctgcaagcgtctgaaagata	235521	670687	see also 3309 line	-	
3318	UBE4A	NM_004786.2	2458	gaactatctctgaaagata	235522	670691	see also 3309 line	-	
3319	UBE4A	NM_004786.2	2846	aggaactctgaaagata	235531	670692	see also 3309 line	-	
3320	UBE4A	NM_004786.2	2896	tgcaactctctgaaagata	235533	670707	see also 3309 line	-	
3321	LHX2	NM_004789.3	1125	tgcctctgcaagcgtctgatt	6141	445314	transcription, regulat	transcription factor	-
3322	LHX2	NM_004789.3	1126	gcctctgcaagcgtctgatt	6142	445315	see also 3321 line	-	

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3323	LHX2	NM_004780.3	1127	cgagctcagaagctctttatata	6143	445316	see also 3321 line			
3324	LHX2	NM_004780.3	1129	agccttgagctctgtttatctaccc	6144	445317	see also 3321 line			
3325	SLC22A6	NM_004790.3	976	caactcttgctgctgctctaca	267191	654134	-	-	-	
3326	SLC22A6	NM_004790.3	978	ctcctgtttgcctcagctcttgc	267194	654140	see also 3325 line			
3327	ITGBL1	NM_004793.1	700	agctcgaatgctctcctatcaga	230438	600346	-	-	-	
3328	ITGBL1	NM_004793.1	801	tggacacatcagatgagcttctct	230438	600352	see also 3327 line			
3329	NRXN3	NM_004796.2	1603	agctcctctctcagctctctctct	238909	775694	receptor activity	-	-	
3330	NRXN3	NM_004796.2	1609	tgtctatctctcagctctctcagc	238910	775695	see also 3329 line			
3331	NRXN3	NM_004796.2	3328	agctcagcagctcctcctcagct	238933	775721	see also 3329 line			
3332	TM6SF2	NM_004800.1	8177	aaagctatgagctctcctcagct	275272	657721	transporter	-	-	
3333	TM6SF2	NM_004800.1	8177	ctggaatgagctctcctcagct	275285	657736	see also 3332 line			
3334	TM6SF2	NM_004800.1	1585	agcgtttatgctctcctcagct	275299	657743	see also 3332 line			
3335	TM6SF2	NM_004800.1	1776	caacacagctctctcctcagct	275308	657751	see also 3332 line			
3336	NRXN1	NM_004801.2	1557	tcycaacgaagctcctcctcaga	319254	663803	-	-	-	
3337	NRXN1	NM_004801.2	1940	acgcagctcagctcagctcattct	319264	663818	see also 3336 line			
3338	NRXN1	NM_004801.2	2428	ctcctctcctcagctcagctcag	319281	663828	see also 3336 line			
3339	NRXN1	NM_004801.2	2528	cgatctcctcagctcagctcag	319286	663836	see also 3336 line			
3340	NRXN1	NM_004801.2	2920	aaagccaactcagctcagctcttc	319296	663851	see also 3336 line			
3341	NRXN1	NM_004801.2	3909	agagctcagctcagctcagctcca	319330	663884	see also 3336 line			
3342	NMT2	NM_004806.1	1033	caagctcctcagctctctcaaga	215486	602778	glycol-peptide N-tetradecanoyl/transferase	-	-	
3343	STOML1	NM_004809.3	1002	agagctcctcctcagctcagct	175471	572652	-	-	-	
3344	LPXN	NM_004811.1	648	tggactcctcctcctctttctagc	207628	671095	signal transduction	-	-	
3345	PARG1	NM_004815.2	946	tggacttggctcctcagctcagact	236892	680007	signal transduction	-	-	
3346	PARG1	NM_004815.2	2322	tcgattgtctcaggaattcttag	236945	680651	see also 3345 line			
3347	TIJP2	NM_004817.1	2772	aaagcagctctctcctccttaact	317477	662135	kinases related	-	-	
3348	EGFL1	NM_004826.1	1909	ggcgtcctcagctctcctctctac	156533	557631	signal transduction	-	-	
3349	MAP4K4	NM_004834.2	1908	aaagctcctcagctcagctcagctca	333066	507500	-	-	-	
3350	MAP4K4	NM_004834.2	2076	tcagcgcctcctcctcagctcagc	333067	507504	see also 3349 line			
3351	MAP4K4	NM_004834.2	2341	tgtatgacacactcagacacaca	333071	507509	see also 3349 line			
3352	MAP4K4	NM_004834.2	3181	tggatcatcaactccctcagctca	333097	507533	see also 3349 line			
3353	EIF2AK3	NM_004836.2	1086	caactttcaactcctcagctctac	81227	501381	protein serine/threonine kinase	epiphyseal dysplasia (多発性少年性骨障害、diabetes(糖尿病))	-	-
3354	EIF2AK3	NM_004836.2	1290	tggatgataactcgttttgctctac	81232	501383	see also 3353 line			
3355	ARHGEF6	NM_004840.1	331	tactctttcagctctcagctcagc	294833	767228	apoptosis		-	
3356	ARHGEF6	NM_004840.1	1766	tggagctcctcctcagctctaa	294873	767267	see also 3355 line		-	
3357	ARHGEF6	NM_004840.1	1767	tggagctcctcctcagctctaa	294874	767268	see also 3355 line		-	
3358	E1F4L3	NM_004846.1	172	tggagctcctcctcagctctaa	49297	473631	-	-	-	
3359	AP5L	NM_004846.1	419	agcagacacactcctctctt	310375	1676419	apoptosis		-	

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3360	AP05L	NM_004849.1	461	gaacttgatcactgaagaatga	310376	676421	see also 3359 line	
3361	AP05L	NM_004849.1	560	agccctcttcactgactgttga	310380	676422	see also 3359 line	
3362	AP05L	NM_004849.1	586	tgtctctcttcactgactgttga	310383	676423	see also 3359 line	
3363	AP05L	NM_004849.1	634	cggaaactactgaagaatcctga	310390	676433	see also 3359 line	
3364	ROCK2	NM_004850.2	1575	aaactgaactctgactgactgacg	99302	513639	kinase related	-
3365	ROCK2	NM_004850.2	1913	gaactgactctcgaagaatggt	99314	513650	see also 3364 line	
3366	ROCK2	NM_004850.2	2054	aaactgactgaagaactcaacttga	99318	513655	see also 3364 line	
3367	ROCK2	NM_004850.2	2246	aaactgaactgactgactgactgata	99328	513661	see also 3364 line	
3368	ROCK2	NM_004850.2	2507	aaactggaatgactgactgactga	99331	513669	see also 3364 line	
3369	ROCK2	NM_004850.2	3308	gaatgactgactgactgactgactga	99354	513687	see also 3364 line	
3370	ROCK2	NM_004850.2	3547	aactcaactctgaatgaatgttg	99360	513692	see also 3364 line	
3371	ROCK2	NM_004850.2	4473	ggatgtgctggttggtgaagaag	99389	513718	see also 3364 line	
3372	ONECUT2	NM_004852.1	92	aaccggactgactgaactggaag	8769	810109	transcription regulator	-
3373	ONECUT2	NM_004852.1	93	aaccggactgactgaactggaag	8770	810110	or	-
3374	GHS1T10	NM_004854.2	365	ccpactgctttgttggtatttc	217431	605528	see also 3372 line	
3375	GHS1T10	NM_004854.2	869	agcactgactgaactgaactgaag	217436	605538	see also 3374 line	
3376	SLC4A8	NM_004860.1	44	agcactgactgactgactgaaga	254558	642448	see also 3374 line	
3377	FXR2	NM_004860.2	719	ggagcactgactgactgactga	51638	473893	RNA binding	-
3378	SPTLC2	NM_004863.2	356	aaactgactgactgaactgactga	215892	603204	transaminase	-
3379	SPTLC2	NM_004863.2	702	aaactgactgactgaactgactga	215901	603212	see also 3378 line	
3380	SPTLC2	NM_004863.2	705	agactgactgactgactgactgact	215902	603213	see also 3378 line	
3381	SPTLC2	NM_004863.2	710	tctcaactgactgactgactgactg	215953	603214	see also 3378 line	
3382	SPTLC2	NM_004863.2	1726	caagcactgactgactgactgacta	216025	603240	see also 3378 line	
3383	TBPL1	NM_004865.2	509	tgcactggaacacagtggaaga	41620	488729	transcription co-activator	-
3384	TBPL1	NM_004865.2	559	agccctgactgactgactgactga	41621	488730	see also 3383 line	
3385	ClorR	NM_004872.3	763	agccgatgacgaagaabaatgta	328103	709314	see also 3383 line	
3386	ClorR	NM_004872.3	764	ggcagatgcgaagaabaatgta	328104	709315	see also 3385 line	
3387	BAQ4	NM_004874.2	931	ctggcccttactctctatggaga	129153	532445	receptor signaling protein	-
3388	El24	NM_004875.2	320	aaccagcttactgactgactgaatt	310981	696340	apoptosis	-
3389	El24	NM_004875.2	321	aaccagcttactgactgactgaatt	310982	696341	see also 3388 line	
3390	El24	NM_004875.2	331	gaagactgactgactgactgactg	310993	696359	see also 3388 line	
3391	CXCL14	NM_004887.3	603	ccpctgactgactgactgactgactg	167388	564454	chemokine	-
3392	SPAG7	NM_004890.1	303	ctgtgactgactgactgactgactg	66219	486356	signal transduction	-
3393	SPAG7	NM_004890.1	312	gtgactgactgactgactgactgactg	66220	486357	see also 3392 line	
3394	SEC22L1	NM_004892.3	202	ggagactgactgactgactgactgactg	305084	673306	see also 3394 line	
3395	SEC22L1	NM_004892.3	221	ggagactgactgactgactgactgactg	305085	673307	see also 3394 line	
3396	SEC22L1	NM_004892.3	226	agactgactgactgactgactgactg	305086	673308	see also 3394 line	
3397	SEC22L1	NM_004892.3	227	ggatgactgactgactgactgactgactg	305087	673309	see also 3394 line	
3398	CLOCK	NM_004898.2	784	tgtgactgactgactgactgactgactg	2292	442742	transcription regulator	-
3399	CLOCK	NM_004898.2	1216	atcatgtgactgactgactgactgactg	2299	442759	or, see also 3398 line	-

3400	CLOCK	NM_004989.2	1366	tgcttcacactctattatt	2304	442767	see also 3398 line	
3401	CLOCK	NM_004989.2	1367	agcttcactctatttttt	2305	442768	see also 3398 line	
3402	CLOCK	NM_004989.2	1354	ctcttcacaaagcaagattct	2311	442771	see also 3398 line	
3403	BRE	NM_004989.3	263	tggtgtcttcacactgtttgag	235359	620328	signal transduction	-
3404	LYSAL1	NM_004901.1	1431	ttcacttcacgaacagtgatc	166356	563752	phosphatase	-
3405	RNP2	NM_004902.2	685	ttgcttcacacatcaaatgaag	54322	475367	transcription_regulat	-
3406	RNP2	NM_004902.2	684	tgcttcacacatcaaatgaag	54323	475368	or	-
3407	RNP2	NM_004902.2	1337	tgcttcacacatcaaatgaag	54347	475392	see also 3405 line	-
3408	RNP2	NM_004902.2	1340	ttcagcttcagcttcattttg	54348	475393	see also 3405 line	-
3409	CREB5	NM_004904.1	153	cocacacagacagcatctgtatga	24563	648472	transcription_regulat	-
3410	CREB5	NM_004904.1	1367	aacactttcttttaacacataaa	24594	457395	see also 3409 line	-
3411	CREB5	NM_004904.1	1369	caattttcttttaacacataaga	24595	457396	see also 3409 line	-
3412	PITPNM1	NM_004910.1	1957	ccccctggagagcatgaacatga	166969	564196	-	-
3413	CCM1	NM_004912.3	1367	gccttgatgaagctgttgatga	297476	687216	signal transduction	-
3414	CCM1	NM_004912.3	1516	agcttcctgtctctctgaatbaa	297481	687226	see also 3413 line	-
3415	CCM1	NM_004912.3	1524	ttcttcacagacaaagagatga	297483	687227	see also 3413 line	-
3416	CCM1	NM_004912.3	1593	tgatcatcagctctcagatga	297484	687228	see also 3413 line	-
3417	CCM1	NM_004912.3	1612	tcaaatcagatgatgatgaagttg	297485	687230	see also 3413 line	-
3418	CCM1	NM_004912.3	1663	tccacactactcaaaaatccaaa	297491	687232	see also 3413 line	-
3419	CCM1	NM_004912.3	1657	catctggcacccatctcagatga	297498	687238	see also 3413 line	-
3420	CCM1	NM_004912.3	1857	ggcaccacatctatctgattct	297499	687241	see also 3413 line	-
3421	CCM1	NM_004912.3	2462	gacccactatctatctgattct	297513	687266	see also 3413 line	-
3422	SEC24C	NM_004922.2	1401	ggggagcttcacactgtattgt	118912	776217	protein transporter	-
3423	SEC24C	NM_004922.2	1580	gggcaaacgtgtgtgtgtgtgtg	118917	776219	see also 3422 line	-
3424	SEC24C	NM_004922.2	2465	cttgtatctcgtctgtgattct	118936	776234	see also 3422 line	-
3425	SEC24C	NM_004922.2	2456	tgatctatctctctgattct	118937	776235	see also 3422 line	-
3426	SEC24C	NM_004922.2	2460	atccgtctctgagattctttg	118938	776236	see also 3422 line	-
3427	ACTN4	NM_004924.3	441	tccactcggcgcaaaagattgt	114868	521239	structural constituent of cytoskeleton	-
3428	CALB1	NM_004929.2	263	aaatgttactctgawggaaag	129558	545128	protein binding	-
3429	CAP2B	NM_004930.1	384	ttctgaagcttctctctctatga	114025	521042	structural constituent of cytoskeleton	-
3430	CAP2B	NM_004930.1	387	ttggagcttctctctctctctctga	114026	521043	see also 3429 line	-
3431	CD46	NM_004932.2	1562	tgactgactctctctctctctct	140235	545526	calcium ion binding	-
3432	CD46	NM_004932.2	14028	ggctggaagaaatgctctctctaa	140248	545846	see also 3431 line	-
3433	CTN8	NM_004937.1	722	agctgtatctcggattctctct	271766	673448	cystine transporter	-

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3467	KCNH2	NM_004974.2	1948	agctatcccaactcttgata	132254	536221	see also 3464 line		
3468	KCNH2	NM_004975.2	2387	ccagacatacctcttcccttctg	132337	536347	channel	protein binding	-
3469	KCNH1	NM_004975.2	2571	ccacactcccttgatctcttaag	132345	536349	see also 3468 line		
3470	KCNH1	NM_004976.2	1460	acgttgagatctcccaattttgt	132414	536360	channel	voltage-gated potassium channel	-
3471	KCNH4	NM_004976.2	197	agctctctctcccaacatgct	132467	536379	channel		-
3472	KCNH4	NM_004976.2	238	ttacgtctctcccaacatgct	132468	536380	see also 3471 line		-
3473	KCNH3	NM_004980.3	1955	ttacgtctctcccaacatgct	132532	536479	channel		-
3474	KIF5A	NM_004984.1	1283	ctgtgtgtctcaatggatgaattgt	87691	505972		motor	-
3475	KIF5A	NM_004984.1	1255	ttgtgtgtctcaatggatgaattgt	87692	505973	see also 3474 line		-
3476	KIF5A	NM_004984.1	2539	ttgtgtgtctctctctcaagctg	87711	505924	see also 3474 line		-
3477	KIF5A	NM_004984.1	2561	gtccagctgtctctctcaagctg	87712	505925	see also 3474 line		-
3478	KIF5A	NM_004984.1	2708	ctctgtctgtgtctctcttaatt	87714	505930	see also 3474 line		-
3479	KRAS2	NM_004985.3	328	aacctctctcttgatattctg	109472	519657	cell cycle,		alveolar cell carcinoma(肺腫), colorectal cancer(大腸癌), breast cancer(乳癌),
3480	KRAS2	NM_004985.3	450	tttaagattatcacattataga	109475	519659	signal transduction		endometrial cancer(子宮癌), lung cancer(肺癌), leukemia(白血病), ovarian cancer(卵巣癌), colorectal
3481	KTN1	NM_004986.1	1866	cgagctctctcttgattctgac	281216	687664			癌, pancreatic cancer(膵臓癌), colorectal
3482	MECP2	NM_004992.2	894	accgaagctctgattgatacaag	32155	461638	transcription, regulat	transcription co-	
3483	MECP2	NM_004992.2	1603	gtccctgtgacgtgagatgttgc	32160	461644	see also 3482 line	pressor	Rett syndrome(レット症候群)
3484	MJD	NM_004993.2	614	atgcatcaccacaactttttg	300594	689080	transcription, regulat		Machado-Joseph disease(マシンド・ジョセフ病), spinocerebellar ataxia(脊髄小脳失調)
3485	MJD	NM_004993.2	905	atgagctgagagactctctcttga	300601	689087	see also 3484 line		
3486	MJD	NM_004993.2	907	ttatgctgagagactctctcttga	300602	689088	see also 3484 line		
3487	MJD	NM_004993.2	909	gtctgagagactctctcttgaaga	300603	689089	see also 3484 line		
3488	MMP14	NM_004995.2	1258	ttgtctggtgagtgatacccaagt	158115	558648			oral cavity cancer(口腔癌), chondrosarcoma(軟骨肉腫), rheumatoid arthritis(関節リウマチ), laryngeal cancer(喉頭癌), CNS Tumours(中枢神経腫瘍), head and neck cancer(頭頸部癌)
3489	ABOC1	NM_004996.2	448	ctgtgtgtgtgacacctcttctct	69965	492031	kinase, related	zinc binding	small cell lung cancer(肺癌)
3490	ABOC1	NM_004996.2	454	ttgcaacactctcttactcttct	69966	492032	see also 3489 line		
3491	ABOC1	NM_004996.2	1507	ttgtctgacgtctatgaacatgct	69978	492059	see also 3489 line		
3492	MYBPB	NM_004997.1	1042	ctgtgtgtctcttcaaaaactgt	289251	677679		structural constituent of muscle	
3493	MYOIE	NM_004998.1	1150	ctgtgacgtctgaactgatttgc	92676	805290			
3494	MYO6	NM_004999.1	424	ttgaggtgacacactattttgaca	93382	509776		structural constituent of muscle	
3495	MYO6	NM_004999.1	729	ctgtgtgtcaacataatgacct	93391	509783	see also 3494 line		
3496	MYO6	NM_004999.1	737	taacataatgacctgatttgc	93392	509784	see also 3494 line		

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3487	MYO8	NM_004999.1	2509	cgatctctgagaaagagctcagt	32445	508919	see also 3484 line			
3498	MYO8	NM_004999.1	2598	aagctggaggaagcaacttgaatgag	33455	509827	see also 3484 line			
3499	NDUFS1	NM_005006.5	1773	ggacagatggagaggtttatcacca	22822	610123	-	iron-sulfur electron transfer	mitochondrial complex deficiency(ミトコンドリア重 白質合成欠陥症)	
3500	NDUFS1	NM_005006.5	1805	tatccaaagatcttcttctctct	22824	610128	see also 3489 line			
3501	NDUFS1	NM_005006.5	2187	tgttctcaactctactactactata	22833	610134	see also 3489 line			
3502	NDUFS1	NM_005006.5	2178	ctctgctactactataaagactto	22834	610137	see also 3489 line			
3503	NRCAM	NM_005010.1	499	cagagtcgcccctctctctcttc	333368	791134	channel	-		
3504	NRCAM	NM_005010.1	560	acctctggagatattgttcttcto	333371	791135	see also 3503 line			
3505	NRCAM	NM_005010.1	2378	tatcccccttcaaaattcatcca	333434	791217	see also 3503 line			
3506	ROR1	NM_005012.1	712	ggctctctgctctggatgtagaa	99404	513730	signal transduction	transmembrane receptor protein		
3507	ROR1	NM_005012.1	3155	aacacacaggaactctgattcttc	99464	513768	see also 3506 line	tyrosine kinase	-	
3508	ROR1	NM_005012.1	3157	caacacgaactctgattctctgc	99465	513787	see also 3506 line			
3509	NUCB2	NM_005013.1	887	cagagcagcaagctcaactcaaaa	34207	483190	-	calcium ion binding	-	
3510	OMD	NM_005014.1	414	ctgtgaactcgaattcttctctc	315394	683901	-	-	-	
3511	PDE1C	NM_005020.1	1502	tacgggactgacgagagaagattg	198011	590023	signal transduction	calmodulin- dependent cyclic- nucleotide	-	
3512	PKCDD	NM_005028.2	2089	tgactctgagacttaccacaatttc	207459	597438	kinase, related	phosphodiesterase	-	
3513	PLS3	NM_005032.3	1040	aaccacggatgagatattatccgtc	118817	523582	-	phosphatidylinositol	-	
3514	PLS3	NM_005032.3	1041	accacggatgagatattatccgtc	118818	523583	see also 3513 line	1,3-kinase, class	-	
3515	PLS3	NM_005032.3	1043	cacagagatgattatcaatgctca	118819	523584	see also 3513 line	calcium ion binding	-	
3516	PLS3	NM_005032.3	1057	acacatttctgtttcaatgtagaac	118820	523585	see also 3513 line	-	-	
3517	PLS3	NM_005032.3	1112	aacacagcagcttaaatgattgttc	118824	523589	see also 3513 line	-	-	
3518	PMSCL1	NM_005033.1	562	tactttatcaactccattattata	53349	474843	-	3'-5' exoribonuclease	-	
3519	PPARG	NM_005037.3	341	gtctgacttctcaactcttatttt	9763	447955	receptor activity, transcription, regulat	obesity(肥満), atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病), lipodystrophy(リポシ ストロフィー), diabetes(糖尿病)	-	
3520	PPARG	NM_005037.3	553	ctctgacttctcaactcttatttt	9770	447964	see also 3519 line	-	-	
3521	PPARG	NM_005037.3	679	tgagcgaacttctcaactcttatttt	9772	447965	see also 3519 line	-	-	
3522	PPARG	NM_005037.3	801	gcactcttcaacagcaagaacacac	9774	447968	see also 3519 line	-	-	
3523	RELN	NM_005045.2	2104	agacttctctcttcaagaacacacac	183909	577164	-	-	-	
3524	RELN	NM_005045.2	5008	tccaatccaactctctctctctctc	183950	577828	see also 3523 line	-	-	
3525	ABCD4	NM_005050.1	1457	cccttgagatgacagagcttatct	70966	492763	-	-	-	
3526	RBP5P5	NM_005050.1	1573	actctaaagatctcaaaagcttgaag	324882	775084	-	-	-	
3527	RBP5P5	NM_005050.1	1606	ctctcttcaaaagagctctctctc	324883	775085	see also 3526 line	-	-	
3528	RBP5P5	NM_005050.1	1608	tccattaaacgaagactctctctca	324884	775086	see also 3526 line	-	-	

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3529	RORC	NM_005060.2	127	aagcaccacacccctccacaattga	10795	448184	receptor activity, transcription_regulat	steroid hormone receptor	-
3530	RORC	NM_005060.2	129	gacccacacccctccacaattgaag	10796	448185	see also 3529 line		
3531	SPFQ	NM_005066.1	1478	cagaagatcccaatgaatcacaa	39200	486224	-	pre-mRNA splicing factor	renal cell carcinoma(腎癌)
3532	SPFQ	NM_005066.1	1990	aggttgatgtgcatgattgtag	39216	486235	see also 3531 line		
3533	SPFQ	NM_005066.1	1993	tgtgttcacatgcatgattgaag	39217	486238	see also 3531 line		
3534	SPFQ	NM_005066.1	1999	tgttcacatgattgaagcatc	39218	486237	see also 3531 line		
3535	SJA42	NM_005087.4	619	ggcacctctgtgttaacaatgc	113317	670815	transcription_regulat cell cycle, signal transduction	-	-
3536	SIM1	NM_005068.2	338	gactcaccaccagcatctcaaa	11210	448398	transcription_regulat	transcription factor	obesity(肥滿)
3537	SIM1	NM_005068.2	342	ccagcaccagcatctcaaaaatga	11211	448400	see also 3538 line		
3538	SIM2	NM_005068.2	372	gagcaccgtctctccatttag	11252	467048	transcription_regulat	-	-
3539	SIM2	NM_005068.2	1025	ctgactctctgtgttcacattag	11267	467060	see also 3538 line		
3540	SLC4A3	NM_005070.1	210	agcagcagcagcacttgaattcca	258442	642769	-	inorganic anion exchanger	-
3541	SLC1A6	NM_005071.1	256	acgcgcacatcaatgactctctct	257897	641228	-	sodiumdicarboxylat e/tricarboxylate cotransporter	-
3542	SLC1A6	NM_005071.1	395	gcggcagcagctctctactacatg	257899	641228	see also 3541 line		
3543	SLC1A6	NM_005071.1	901	gcctcaatggcgtctatataagg	257701	641238	see also 3541 line		
3544	SLC12A4	NM_005072.3	1895	cccgctcaatgactctactcag	257221	640750	cell cycle	-	-
3545	SLC15A1	NM_005073.1	1188	gtcgaggtggaatcgtataaac	258442	643992	-	peptidichydrogen symporter	-
3546	TLF3	NM_005078.1	1055	cggcatggaccgctaggtatata	300957	689480	transcription_regulat	-	-
3547	TLF3	NM_005078.1	1056	ggcatggaccgctaggtatataa	300958	689481	see also 3546 line		
3548	TLF3	NM_005078.1	1057	ggcatggaccgctaggtatant	300959	689492	see also 3546 line		
3549	XPB1	NM_005080.2	428	tggttgagcaacagtgattga	13956	470342	transcription_regulat	transcription factor	-
3550	FXR1	NM_005087.1	55	tctcaaaaggtattatcaaaaag	51758	473847	apoptosis	RNA binding	-
3551	FXR1	NM_005087.1	162	acccacacgtctatcaaaaag	51768	473850	see also 3550 line		
3552	FXR1	NM_005087.1	347	tgcgctctcaatcaaaaatg	51773	473854	see also 3550 line		
3553	FXR1	NM_005087.1	1197	ccactcggtctatgccaatg	51810	473861	see also 3550 line		
3554	FXR1	NM_005087.1	1198	acccctcggtctgccaatc	51811	473862	see also 3550 line		
3555	FXR1	NM_005087.1	1201	tccgctatggcacaatctga	51812	473863	see also 3550 line		
3556	FXR1	NM_005087.1	1203	cggctatggcacaatctggc	51813	473864	see also 3550 line		
3557	FXR1	NM_005087.1	1436	accacacgctctctgtaant	51817	473887	see also 3550 line		

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3558	FXR1	NM_005087.1	1443	catcactactgataacagaaat	51820	473888	see also 3550 line		
3559	ZNF261	NM_005096.1	492	ttcccttgagagcctcagagc	44713	709357		DNA binding	-
3560	ZNF261	NM_005096.1	517	ttgtctcagactctccaaataac	44714	709358	see also 3559 line		
3561	ZNF261	NM_005096.1	518	ttgtctcagactctccaaataac	44715	709359	see also 3559 line		
3562	ZNF261	NM_005096.1	895	atgtatgagatgcccaatgatac	44719	709362	see also 3559 line		
3563	ZNF261	NM_005096.1	1409	ttgtcccaacagcagctgaacac	44723	709366	see also 3559 line		
3564	ZNF261	NM_005096.1	1584	ctgtgtcccaacagcagctgaacac	44726	709369	see also 3559 line		
3565	ZNF261	NM_005096.1	1591	atgtatgagatgcccaatgatac	44729	709370	see also 3559 line		
3566	ZNF261	NM_005096.1	1685	ttgtctcagactctccaaataac	44729	709372	see also 3559 line		
3567	ZNF261	NM_005096.1	1686	ttgtctcagactctccaaataac	44730	709373	see also 3559 line		
3568	ZNF261	NM_005096.1	2558	catcagcaacccctgcgaataacag	44739	709380	see also 3559 line		
3569	ZNF261	NM_005096.1	3455	ttgtcccaacagcagctgaatg	44762	709403	see also 3559 line		
3570	ZNF261	NM_005096.1	3457	ttgtcccaacagcagctgaatg	44763	709404	see also 3559 line		
3571	ZNF261	NM_005096.1	3578	ttgtcccaacagcagctgaatg	44768	709410	see also 3559 line		
3572	ZNF261	NM_005096.1	3724	atgtctcccaacagcagctgaatg	44769	709414	see also 3559 line		
3573	ZNF261	NM_005096.1	3841	ttgtcccaacagcagctgaatg	44771	709415	see also 3559 line		
3574	LGII	NM_005097.1	348	ttgtcccaacagcagctgaatg	309168	710200			CNS Tumours(中枢神経腫瘍)
3575	LGII	NM_005097.1	1870	ttgtcccaacagcagctgaatg	309169	710201	see also 3574 line		
3576	LGII	NM_005097.1	1870	ttgtcccaacagcagctgaatg	309236	710263	see also 3574 line		
3577	ADAMTS4	NM_005099.2	2613	ttgtcccaacagcagctgaatg	155601	556380			
3578	FEZ1	NM_005103.3	384	atgtctcagactgaacataac	312524	808706			esophageal cancer(食道癌), squamous cell cancer(扁平上皮癌)
3579	FEZ1	NM_005103.3	472	atgtctcagactgaacataac	312525	808707	see also 3578 line		
3580	FEZ1	NM_005103.3	1266	ttgtcccaacagcagctgaatg	312533	808712	see also 3578 line		
3581	GFPT2	NM_005110.1	1122	ttgtcccaacagcagctgaatg	174684	568573		sugar binding	-
3582	CRYZLI	NM_005111.5	727	ttgtcccaacagcagctgaatg	156392	557412			-
3583	CRYZLI	NM_005111.5	756	ttgtcccaacagcagctgaatg	156394	557415	see also 3582 line		
3584	CRYZLI	NM_005111.5	757	ttgtcccaacagcagctgaatg	156395	557416	see also 3582 line		
3585	MDRI	NM_005112.3	776	ttgtcccaacagcagctgaatg	120153	524969			-
3586	MDRI	NM_005112.3	1489	ttgtcccaacagcagctgaatg	120166	524987	see also 3585 line		
3587	GOLGA5	NM_005113.2	2136	ttgtcccaacagcagctgaatg	321683	686299			-
3588	GOLGA5	NM_005113.2	2171	ttgtcccaacagcagctgaatg	321684	686301	see also 3587 line		
3589	SLO22A2	NM_005116.4	852	ttgtcccaacagcagctgaatg	259235	640358			-
3590	TRAP150	NM_005119.1	2062	ttgtcccaacagcagctgaatg	103037	637938	receptor activity, transcription_regulat		-
3591	TRAP150	NM_005119.1	2151	ttgtcccaacagcagctgaatg	103039	637941	see also 3590 line		-
3592	TNRC11	NM_005120.1	1357	ttgtcccaacagcagctgaatg	112582	469273	receptor activity, transcription_regulat		-
3593	TNRC11	NM_005120.1	2398	ttgtcccaacagcagctgaatg	112607	469302	see also 3592 line		-
3594	TNRC11	NM_005120.1	2770	ttgtcccaacagcagctgaatg	112610	469305	see also 3592 line		-
3595	TNRC11	NM_005120.1	3051	ttgtcccaacagcagctgaatg	112615	469314	see also 3592 line		-
3596	TNRC11	NM_005120.1	3380	ttgtcccaacagcagctgaatg	112621	469325	see also 3592 line		-

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3597	TNRC11	NM_005120.1	4266	agccacacatgaggtttctcaac	112633	489351	see also 3592 line	
3598	TNRC11	NM_005120.1	4656	ccagccaggtctcacctctctgga	112635	489356	see also 3592 line	
3599	TNRC11	NM_005120.1	5141	ctgctctgagctctctctctcaag	112643	489365	see also 3592 line	
3600	TNRC11	NM_005120.1	5142	tgagcttgagctctctctctcaag	112646	489370	see also 3592 line	
3601	NUP153	NM_005124.2	323	ccaggtctcacctctctctcaaga	34215	510679	transporter	-
3602	NUP153	NM_005124.2	353	gccagcttgctctcacctctcaag	34216	510681	see also 3601 line	
3603	NUP153	NM_005124.2	1219	ttgataaggttgagctctctctcaag	34250	510696	see also 3601 line	
3604	NUP153	NM_005124.2	2458	tttgagagagccctctctctctcaag	34296	510734	see also 3601 line	
3605	NUP153	NM_005124.2	2463	atctgagagccctctctctctcaag	34297	510735	see also 3601 line	
3606	THOC1	NM_005131.1	225	aacctttctctctctctctctct	292491	682497	-	-
3607	THOC1	NM_005131.1	760	tgcacatgcatgagcaagcttcca	292511	682525	see also 3606 line	
3608	THOC1	NM_005131.1	1067	ttgatttgagctctctctcaaat	292517	682535	see also 3606 line	
3609	THOC1	NM_005131.1	1140	atgatttgagctctctctctcaaat	292518	682537	see also 3606 line	
3610	THOC1	NM_005131.1	1517	acgagagagccctctctctctctcc	292523	682548	see also 3606 line	
3611	SLC12A8	NM_005136.1	1762	acctaacttgagctctctctctca	256911	640798	cell cycle	-
3612	DGCR2	NM_005137.1	1021	tgatataaggtctctctctctcaac	174555	558444	receptor activity	-
3613	GIF	NM_005142.2	588	tgactcttgagcaacagatctcc	180607	573917	receptor binding	-
3614	TBX19	NM_005149.1	1016	ctgacagcttgagctctctctctcc	12738	449117	transcription, regulat	pernicious anemia(悪性貧血)
3615	USP10	NM_005153.1	1352	acccttgagctctctctctcaaac	189789	582799	transcription factor	hereditary idiopathic hypoparathyroidism (先天性副甲状腺機能低下症)
3616	USP10	NM_005153.1	1353	cccttgagctctctctctcaaac	189790	582800	terminal hydrolase	-
3617	USP8	NM_005154.1	348	ctctactctcagctctctctctcaaa	190384	452437	ubiquitin-specific protease	-
3618	USP8	NM_005154.1	552	ttcaatcagcagcagctctctctct	190389	452445	see also 3617 line	
3619	USP8	NM_005154.1	2639	agctcttgagctctctctctctctct	190435	452485	see also 3617 line	
3620	USP8	NM_005154.1	2824	cccttgagcagcagcagctctctct	190439	452490	see also 3617 line	
3621	USP8	NM_005154.1	3184	ttacatctcaacaaatcaatctctca	190457	452497	see also 3617 line	
3622	PP2T	NM_005155.5	1344	ggagctctctctctctctctctctct	200261	592089	-	-
3623	ROD1	NM_005156.3	922	ccacccactctctctctctctctct	54378	486037	-	-
3624	ROD1	NM_005156.3	1263	ccatcttgctctctctctctctctct	54384	486045	see also 3623 line	
3625	ROD1	NM_005156.3	1269	atgtacatctctctctctctctctct	54385	486047	see also 3623 line	
3626	ACTC	NM_005159.2	1000	ccctcttgagctctctctctctctct	288217	659061	translation	cardiomyopathy(アノール症心筋症)
3627	ADRBK2	NM_005160.2	226	ttgcaagattttctcaactctctctca	71176	792555	kinase, related, gpcr,	-
3628	ABGD2	NM_005164.2	640	cttgagctctctctctctctctctct	70795	492580	G-protein coupled receptor kinase	-
3629	ABGD2	NM_005164.2	973	atcttgagctctctctctctctctct	70811	492583	ATP-binding cassette (ABC)	-
3630	ABGD2	NM_005164.2	976	cttgagctctctctctctctctctct	70813	492585	transporter	-
3631	ABGD2	NM_005164.2	1571	gttctctctctctctctctctctctct	70834	492611	see also 3628 line	
3632	ABGD2	NM_005164.2	1769	agagctatgtctctctctctctctct	70842	492621	see also 3628 line	
3633	APLP1	NM_005166.2	1025	atcttgagctctctctctctctctct	177429	570593	apoptosis	-
3634	APLP1	NM_005166.2	1028	tccttgagctctctctctctctctct	177430	570594	see also 3633 line	

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3635	MGC19531	NM_005167.4	1831	ccgcctggcctccacaagaatgc	236821	531029	-	-	breast cancer(乳癌), pancreatic cancer(膵臓癌), melanoma(メラノーマ)
3636	MGC19531	NM_005167.4	1832	cgcctggcctccacaagaatgc	239822	531030	see also 3635 line	-	
3637	ARHE	NM_005168.2	179	atctcatatgctctctatcaga	108344	518695	-	Rho small monomeric	-
3638	ARHE	NM_005168.2	194	atctcaatcagaagcgaagc	108345	518696	see also 3637 line	-	-
3639	ARHE	NM_005168.2	660	tgcgtatgcctcattcttcctgc	108360	518674	see also 3637 line	-	-
3640	ARHE	NM_005168.2	823	caagtgcctgcacttccaag	108365	518680	see also 3637 line	hydrogen-transporting two-sector ATPase	-
3641	ATP6V0A1	NM_005177.2	338	atgtgaagaatgatgcgaagc	266206	653528	-	-	-
3642	ATP6V0A1	NM_005177.2	1471	atgagaatgaagctttgacct	266229	653556	see also 3641 line	voltage-gated calcium channel	night blindness(夜盲症)
3643	CAGNA1F	NM_005183.1	4418	gagatcctgtctcaatgacc	138791	545095	channel	transcription factor	Jacobson syndromes(Jacobson症候群)
3644	GBL	NM_005188.1	831	tgtgtctacctcgaatgttat	2064	533219	or,	-	-
3645	GBL	NM_005188.1	834	atctgaacctcaactatttatt	2065	533220	see also 3644 line	-	-
3646	GBL	NM_005188.1	1160	tgtgttctctatggcgaatca	2072	533229	see also 3644 line	-	-
3647	GBL	NM_005188.1	1720	tgtctctcctctctaaagcaaac	2085	533242	see also 3644 line	-	-
3648	CNC	NM_005190.2	220	atccaagcattgctgaacattct	300218	686869	or	cyclin-dependent protein kinase, regulator	-
3649	CNC	NM_005190.2	267	tgatccaagctgaggaattctg	300222	686877	see also 3648 line	-	-
3650	CNC	NM_005190.2	529	tgtgtctgaagatgctatc	300226	686879	see also 3648 line	-	-
3651	CNC	NM_005190.2	536	tgtgtatgatactctctctag	300227	686880	see also 3648 line	-	-
3652	CNC	NM_005190.2	619	gagatgagtgatgatactacca	300229	686881	see also 3648 line	-	-
3653	CEBPB	NM_005194.2	1167	caagcaacctgcggaacttgtaa	2154	457011	or	transcription regulator	-
3654	CEBPB	NM_005194.2	1170	caacctgcggaacttgtaagc	2155	457012	see also 3653 line	-	-
3655	COL13A1	NM_005203.3	817	aactctgagcagaagaatgaag	333572	696105	-	-	-
3656	CRK	NM_005206.2	688	gcctcagatgcctctctgttgcg	252589	533914	or	transcription regulator	-
3657	CRK	NM_005206.2	723	tgttaagatctgaagcttaatt	252593	533915	see also 3656 line	-	-
3658	CRK	NM_005206.2	729	aggctaacgaacttaattgaatt	252594	533916	see also 3656 line	structural constituent of eye lens	-
3659	CRYBA1	NM_005208.3	214	aagtgcgcctgagctgttctatg	298522	659911	-	-	-
3660	CRYBA1	NM_005208.3	217	tgcgcctgctgttcttatacgc	298523	659912	see also 3659 line	hematopoietic-associated factor	anemia macrocytic(溶血性貧血), diabetes(糖尿病), arthritis(関節炎)
3661	GSF1R	NM_005211.2	2687	ctgctgtaggaacatctgaatga	77610	498854	kinase related	1A complex	bricho-dento-osseous syndrome(毛髪歯骨症候群)
3662	DLX3	NM_005220.2	464	tactgccaacatgggaataaac	2085	442992	or	transcription factor	-

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3663	EDC3	NM_005226.2	1388	cgctgcacacagcagcagtaaa	17423	501260	lysophingolipid and lysophosphatide	-
3664	EFNA4	NM_005227.2	482	acctctgagagctactactctca	200035	694388	receptor activity	-
3665	EFNA4	NM_005227.2	485	tggagagctactactactactct	200036	694390	see also 3664 line	-
3666	EFNA4	NM_005227.2	487	gagagagctactactactactctg	200037	694391	see also 3664 line	-
3667	ELK1	NM_005229.2	419	ggccttgccgactactactgaca	3142	443353	transcription regulator	soft tissue sarcoma(軟組織肉腫)、bladder cancer(膀胱癌)、synovial sarcoma(滑膜肉腫)
3668	EPHA1	NM_005232.2	264	tggacacacctctacatgacc	81316	501537	receptor activity, kinase, related, signal, transduction	non-small-cell lung cancer(非小細胞肺癌)
3669	EPHA1	NM_005232.2	320	accactgctctctctccacttgg	81317	501538	see also 3668 line	-
3670	EPHA1	NM_005232.2	324	ctgcttgcctctcaattggatct	81318	501539	see also 3668 line	-
3671	ERCC4	NM_005236.1	363	tggaaactactcagatttaatta	26080	484345	endoxaoyribonuclease	xeroderma pigmentosum(色素性乾皮症)
3672	ETS1	NM_005238.1	302	gcgcactctccactcatcaaga	3515	443603	transcription regulator	chondrosarcoma(軟骨肉腫)
3673	EV11	NM_005241.1	839	aggtctccacataactctactct	26202	696462	-	leukemia(白血病)
3674	EV11	NM_005241.1	843	ctctctcaatactactactactg	26203	696463	see also 3673 line	-
3675	EV11	NM_005241.1	943	ttcgacacacagctctctctata	26204	696464	see also 3673 line	-
3676	EV11	NM_005241.1	945	cagacacacagctctctctata	26205	696465	see also 3673 line	-
3677	EV11	NM_005241.1	948	cactacagctctctctctataaac	26207	696466	see also 3673 line	-
3678	EV11	NM_005241.1	1063	acgtctcagctctctctctataaac	26210	696468	see also 3673 line	-
3679	EV11	NM_005241.1	1201	taccacagctctctctctataaac	26211	696472	see also 3673 line	-
3680	EV11	NM_005241.1	1688	agagctctcgagatgattctataa	26219	696492	see also 3673 line	-
3681	EV11	NM_005241.1	2507	acctaacctcgcctctctgataac	26240	696508	see also 3673 line	-
3682	EWSR1	NM_005243.1	531	ttagatattgacagagatctaac	51493	473769	transcription regulator	extraskelatal myxoid chondrosarcoma(骨外性粘液性軟骨肉腫)、desmoplastic small round cell tumor(纖維形成性円形細胞腫瘍)、extraskelatal myxoid chondrosarcoma(骨外性粘液性軟骨肉腫)、chondrosarcoma(軟骨肉腫)、sarcoma(肉腫)、maxillary tumor(上顎腫)、paraspinal neurogenic tumor(傍脊神経性腫瘍)、clear cell sarcoma(透明細胞肉腫)、Ewing sarcoma(ユーンインガ肉腫)、lipomatous tumor(脂肪腫性腫瘍)、Askin tumor (esthesioneuroblastoma)(鼻顔神経鞘細胞腫)、myxoid liposarcoma(粘液性脂肪肉腫)、Ewing's sarcoma of the soft tissue(軟組織所起肉腫)、malignant melanoma(悪性黒色腫)、Ewing's tumours(ユーンインガ腫瘍)
3683	EWSR1	NM_005243.1	532	agagattgacagagatctaac	51494	473770	see also 3682 line	-
3684	EWSR1	NM_005243.1	710	cagagctctctctctgataaacag	51497	473773	see also 3682 line	-

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3685	ENSR1	NM_005243.1	857	ccacgaatcagctgagctgattatgg	51500	473776	see also 3682 line		
3686	FER	NM_005248.1	2228	atgatcatcccaatgtrgcaaa	82179	502228	kinase related	protein tyrosine kinase	-
3687	FER	NM_005248.1	2271	agagcagctctgctactcatctc	82180	502230	see also 3685 line		
3688	FER	NM_005248.1	2660	gtccgacctctggaatcacat	82190	502237	see also 3685 line		
3689	FER	NM_005248.1	2661	tccgacctctggaatcacatc	82191	502238	see also 3685 line		
3690	FOXG1B	NM_005249.3	1431	ctggccagacacgaattcttttc	4047	443872	transcription_regulat	transcription factor	-
3691	FOXG1B	NM_005249.3	1480	gtcccgacacccgaattcttttc	4050	443873	or		
3692	FOXG1B	NM_005249.3	1481	tcccgacacccgaattcttttc	4051	443874	see also 3690 line		
3693	FOXG1B	NM_005249.3	1550	ctgcccctgagctttgaagccc	4053	443975	see also 3690 line		
3694	FOXG1B	NM_005249.3	1603	tggggagctctgctatttttca	4056	443976	see also 3690 line		
3695	FOXG1B	NM_005249.3	1805	ggagagctctgctatttttca	4057	443977	see also 3690 line		
3696	FOXG1B	NM_005249.3	1845	tctctcaaccccttaatttca	4058	443978	see also 3690 line		
3697	FOSL2	NM_005253.2	870	cagagatattccggagaaattga	3988	459550			
3698	GAS2	NM_005256.2	185	tgtgtgttaaccaacttatgaag	306253	674272	cell cycle,	transcription factor	-
3699	GATA6	NM_005257.3	1556	caaaaacccctgctctcatcagc	4437	444368	transcription_regulat	translation	-
3700	GDF8	NM_005258.1	671	atgaagacggtacaaagatgac	168824	565594	or	regulator	-
3701	GFR1	NM_005264.2	1834	agccacataaccacaatcat	248779	634986	receptor activity,	growth factor	-
3702	GP16A	NM_005277.2	250	ctggagacacccctgagcttttt	325643	692320	signal transduction		-
3703	GP16B	NM_005278.2	434	aacttccagctgagtttaaaaca	280417	692352		molecular function	-
3704	GP12	NM_005288.1	673	atgagcagcgcctcatcagatgc	239407	696790	gpcr,	rhodopsin-like	-
3705	GP12	NM_005296.1	217	atcaactctgctgaatcaactat	239652	624708	receptor activity,	rhodopsin-like	-
3706	GP12	NM_005296.1	224	ctgtcagtaaacattatacaatg	239653	624709	see also 3705 line		-
3707	GP12	NM_005296.1	1018	gtcccaatgacctttttagtataa	239678	624737	see also 3705 line		-
3708	GP12	NM_005296.1	1019	gtcccaatgacctttttagtataa	239680	624738	see also 3705 line		-
3709	GP12	NM_005296.1	1020	cccaatgacctttttagtataa	239681	624739	see also 3705 line		-
3710	GP12	NM_005296.1	164	ttgtatgcttttcctcaatgataat	239690	624756	gpcr,	nucleotide	-
3711	GP13	NM_005300.2	530	aagtggacacccagctgctattct	239763	624833	receptor activity,	protein coupled	-
							signal transduction		
							gpcr,	nucleotide	-
							receptor activity,	protein coupled	-
							signal transduction		
							gpcr,	nucleotide	-
							receptor activity,	protein coupled	-
							signal transduction		

				ctcgaagatgcgcctatag	239811	gprc, receptor activity, signal transduction	rhodopsin-like receptor, transferring glycosyl groups	Parkinson disease(パーキンソン病)
3712	GPR37	NM_005302.2	1850			624886		
3713	HAS2	NM_005328.1	802	aactctccctggattaaagtg	213525	601885		
3714	HAS2	NM_005328.1	1810	ctgcctatagagagatctca	213553	601913	see also 3713 line	
3715	HAS2	NM_005328.1	2172	atgcattctgctatgata	213572	601929	see also 3713 line	lipoblastoma(脂肪芽細胞腫)
3716	HCF1	NM_005334.1	262	ttggagctctgcacaaatctagc	4597	696009	transcription_regulat	
3717	HDLP	NM_005336.1	444	aggttgaacagcaaaactcgc	51902	484484	transcription factor	
3718	HDLP	NM_005336.1	1307	cgagactctgcacaaatctactca	51925	484510	lipid transporter	atherosclerosis(動脈硬化症)
3719	HDLP	NM_005336.1	1531	cgagactcaagacagctcaag	51930	484516	see also 3717 line	
3720	HDLP	NM_005336.1	1702	aggttctctctgcacaaatctg	51938	484524	see also 3717 line	
3721	HDLP	NM_005336.1	1883	ctgtctgaacaaatctcaaat	51946	484534	see also 3717 line	
3722	HDLP	NM_005336.1	1919	ctcaaacatttccacaaat	51949	484537	see also 3717 line	
3723	HDLP	NM_005336.1	1946	gggaagagagctcaacaaatca	51951	484540	see also 3717 line	
3724	HEM1	NM_005337.2	767	gcacatgaacccctcctatc	325695	769553		
3725	HEM1	NM_005337.2	770	atcttaaccctctcaattcaaa	325696	769554	see also 3724 line	
3726	HEM1	NM_005337.2	793	baaaagcctctgaatctctgt	325698	769556	see also 3724 line	
3727	HP1	NM_005338.4	839	tcaaaagttagaagctctctct	117491	523171	structural constituent of cytoskeleton	
3728	HP2	NM_005339.3	284	tccccaaggtccggtttatca	228817	616450	transcription_regulat	
3729	HP2	NM_005339.3	333	tccgtcaagagctattgttt	228821	616452	or	
3730	HP2	NM_005339.3	341	agagctatttttgatctatcc	228822	616453	see also 3728 line	
3731	HP2	NM_005339.3	394	tccgcgcgtattttgtcttg	228828	616458	see also 3728 line	
3732	HSPA5	NM_005347.2	939	ggcactaatctgggtactctatc	85228	503934	Hsp70/Hsp90 organizing protein	
3733	HSPA5	NM_005347.2	1299	gactcgaattcccaagattcagc	85237	503944	see also 3732 line	
3734	RBP5UH	NM_005349.1	106	tagtgaagctcttggaattatt	37901	465644	transcription_regulat	
3735	RBP5UH	NM_005349.1	111	aaagctatctggaattattaaa	37902	465647	see also 3734 line	
3736	MADH4	NM_005359.3	450	accatacagaacatttgatag	6272	461328	transcription_regulat	colorectal cancer(大腸癌), pancreatic carcinoma(膵臓癌), lung cancer(肺癌), pancreatic cancer(膵臓癌), polyposis(ポリプス症), colorectal cancers(結腸直腸癌)
3737	MADH4	NM_005359.3	575	ttgtcaatcttggtttacttca	6276	461331	or	
3738	MADH4	NM_005359.3	577	ttgtcaatcttggtttacttca	6277	461332	see also 3736 line	
3739	MADH4	NM_005359.3	611	cttgagatctatatacactacg	6278	461334	see also 3736 line	
3740	MADH4	NM_005359.3	1000	agccactactatcactatcacc	6286	461346	see also 3736 line	
3741	MADH4	NM_005359.3	1439	tatgacacacagctgtcttacc	6299	461350	see also 3736 line	

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3742	MOF2	NM_005386.2	347	tgttatacctggcctcagtagt	296075	684673	guany-nucleotide release factor	—
3743	MPL	NM_005373.1	384	cttgcacactcttggtgaagaagt	244198	445935	receptor activity, translation	megakaryocytic thrombocytopenia/巨核母血小
3744	MPL	NM_005373.1	1917	ttctctctacacacttagctatt	244211	445948	regulator	格爾少症/leukemia(白血病)
3745	MPL	NM_005373.1	1918	ttcttactacacactaagctatg	244212	445949	—	—
3746	—	—	—	—	—	—	peptidyl-prolyl cis- trans isomerase	—
3747	NKTR	NM_005385.2	270	ttcttcagacatattcccaaacac	177278	619087	—	—
3748	NKTR	NM_005385.2	520	tgttcacatctggaggaacatacc	177285	619084	see also 3746 line	—
3749	NKTR	NM_005385.2	1409	atctcttgctctacttaagctatt	177307	619120	see also 3746 line	—
3750	NKTR	NM_005385.2	4004	ctgcctctggctctctctttgatg	177370	619178	see also 3746 line	—
3751	NKTR	NM_005385.2	4231	ctctgacagaagaacactctcaga	177379	619184	see also 3746 line	—
3752	NNAT	NM_005386.2	224	tggatgatgctctctcttgcga	272957	685409	—	—
3752	NNAT	NM_005386.2	225	ggatgaattgctctctcttttgaat	272958	685410	see also 3751 line	—
3753	NUP98	NM_005387.3	700	agcctgagctgtagctacacatca	269558	712596	—	chronic myeloid leukemia(慢性骨髓性白血病)、 leukemia(白血病)
3754	NUP98	NM_005387.3	900	agctctctccacactctattccag	269562	712598	see also 3753 line	—
3755	NUP98	NM_005387.3	2568	gggttcagctctctctctctctctg	269606	712644	see also 3753 line	—
3756	NUP98	NM_005387.3	3568	cccccacatgctctctctctctctg	269642	712671	see also 3753 line	—
3757	NUP98	NM_005387.3	3570	cccccacatgctctctctctctctg	269643	712672	see also 3753 line	—
3758	NUP98	NM_005387.3	3665	gcccaatctctctctctctctctg	269644	712673	see also 3753 line	—
3759	PDOL	NM_005386.2	342	cccaaaaagctgtatcatctact	252464	649532	regulator of G- protein signaling	—
3760	PDK3	NM_005391.1	471	ttcttgatgctggtttatataccac	96165	511638	kinase, related, pyruvate	—
3761	PDK3	NM_005391.1	915	atctgcttttttaactacatttat	96184	511655	signal transduction dehydrogenase	—
3762	PDK3	NM_005391.1	1146	ccctctgtctgcctattacaagcc	96180	511663	(lipoamide) kinase	—
3763	PHF2	NM_005392.2	1518	aagctgccacagcattccaaat	9249	463559	transcription, regulat	—
3764	PHF2	NM_005392.2	2129	aagtgagctgtctctctcttctg	9254	463569	or	—
3765	PHF2	NM_005392.2	3232	cccttcacaaagaaacactgacg	9262	463577	see also 3763 line	—
3766	PNLIPRP2	NM_005396.3	161	ccctctctctctctctctctctct	199773	591521	triacylglycerol lipase	—
3767	PTPN14	NM_005401.3	605	gggttcacagaatcatcatatta	193429	586790	phosphatase	—
3768	PTPN14	NM_005401.3	620	caattatactcagaactccaasaa	193431	586792	see also 3767 line	—
3769	PTPN14	NM_005401.3	2340	ctctgatactcagaactcagaagcc	193462	586828	see also 3767 line	—
3770	RALA	NM_005402.2	525	ccctcgaattatggagacacactc	110444	520193	signal transduction	—
3771	RALA	NM_005402.2	527	cgtcatttgatggacacactcttc	110445	520194	protein binding	—
3772	ROCK1	NM_005406.1	3	gtcactctggggagagttttgaga	99205	513525	kinase, related, apoptosis,	—
3773	ROCK1	NM_005406.1	529	tctcactctcagaagtagttct	99215	513537	signal transduction	—
3774	ROCK1	NM_005406.1	551	tgtcatttgatggacactctctcc	99216	513538	see also 3772 line see also 3773 line	—

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3775	ROCK1	NM_005408.1	1852	atgaactactctgagcagatctc	89238	513545	see also 3772 line			
3776	ROCK1	NM_005408.1	2808	caactctgacgcctctgagag	89239	513573	see also 3772 line			
3777	ROCK1	NM_005408.1	3181	gcactctgacgcctctgagag	89240	513580	see also 3772 line			
3778	ROCK1	NM_005408.1	3188	aagcgcactctgagcagatct	89271	513581	see also 3772 line			
3779	SIK3	NM_005413.1	430	gcgaactctgcgcctctccacc	11285	441338	transcription factor or	holoprosencephaly(全前腦膨症)		
3780	SIK3	NM_005413.1	743	gcctcgagagcctctccacacaa	11286	441338	see also 3779 line			
3781	SLC20A1	NM_005415.3	555	tctctccttgagcccaatgctt	251489	637748	receptor activity, kinase related			
3782	SLC20A1	NM_005415.3	565	ggccaactctgcgaactctct	251490	637749	see also 3781 line			
3783	SLC20A1	NM_005415.3	680	ggccaactctgcgaactctct	251491	637750	see also 3781 line			
3784	SLC20A1	NM_005415.3	796	aactctctgctctgttttgag	251495	637757	see also 3781 line			
3785	SLC20A1	NM_005415.3	1099	caactctctgctctgttttgag	251503	637768	see also 3781 line			
3786	ST5	NM_005418.2	2189	aagcgcagcagcttttgatc	333771	740684				
3787	TECTA	NM_005422.1	444	atgagaggaactcactttatg	285092	614734				
3788	TECTA	NM_005422.1	5661	caaggacgcgcagactctgag	288174	614816	see also 3787 line			
3789	TP13	NM_005427.1	1579	accaccgcgcctgcgtttttta	13473	449556	transcription regulat or, apoptosis, cell cycle, signal transduction	bladder cancer(膀胱癌), lung cancer(肺癌), neuroblastoma(神經母細胞瘤)		
3790	VEGFC	NM_005429.2	1342	tggcccacacaaagactagaca	169581	588298	signal transduction or cell cycle	neuroblastoma(神經母細胞瘤)		
3791	NOCA4	NM_005437.1	244	tccgcctctgacagcaactaa	112242	709117	transcription regulat or	thyroid cancer(甲狀腺癌)		
3792	RQCD1	NM_005444.1	455	aagaggaatcaacttttttta	320588	679388				
3793	CSPG6	NM_005445.2	375	aagtttcactctgagagctatt	77789	499056	cell cycle, signal transduction			
3794	CSPG6	NM_005445.2	400	tgcacaaaagatgcagctttctt	77791	499058	see also 3793 line			
3795	CSPG6	NM_005445.2	1227	aggtctgagcagcagcttttca	77817	499074	see also 3793 line			
3796	CSPG6	NM_005445.2	1598	aagcgcatttaaatggaataga	77825	499085	see also 3793 line			
3797	CSPG6	NM_005445.2	1930	gaagtccatcccgactttgaca	77838	499101	see also 3793 line			
3798	CSPG6	NM_005445.2	2206	aagacttaataatgaattgctc	77852	499110	see also 3793 line			
3799	CSPG6	NM_005445.2	2788	gaattctgagcctgagaaata	77861	499126	see also 3793 line			
3800	ZNF297	NM_005453.3	1678	gccctctctgcaaaaagtttc	45056	470769	transcription regulat or			
3801	ZNF297	NM_005453.3	1679	cccccctctgcaaaaagtttc	45057	470770	see also 3800 line			
3802	HNRPDL	NM_005463.2	1011	agccacagcagcaaatgttt	19563	484581				
3803	HNRPDL	NM_005463.2	1710	agttttctctctctctctct	19579	484594				
3804	AKT3	NM_005465.3	85	agcagattctacactgaaaga	71976	493869	kinase related, signal transduction			
3805	AKT3	NM_005465.3	221	tactcttctctctctacacttt	71980	493873	see also 3804 line			
3806	AKT3	NM_005465.3	734	aagcgcctctgctgttttgatg	71989	493888	see also 3804 line			
3807	AKT3	NM_005465.3	814	gaagcgcagcagctctctatg	71992	493889	see also 3804 line			
3808	AKT3	NM_005465.3	1219	ctctttatataaggtcccaataa	72003	493703	see also 3804 line			

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				capacitance	gagcagctgagctgataaac	249953	728439	receptor activity/ transcription/regulated or		
3809	MED6	NM_005466.1	376	452	gacagtgagccctctatgct	260986	644348	transcription/regulated channel	—	—
3810	KONE3	NM_005472.2	452	1001	ggagagcctcctctctacaact	113947	525928	or, cell cycle	—	—
3811	HDAC5	NM_005474.3	1001	3232	ctctgacagccagcagctgctg	113961	525956	see also 3811 line	—	—
3812	HDAC5	NM_005474.3	3232	1777	tacatccagctgctgctgctgctg	187808	581545	—	—	—
3813	PI3K	NM_005482.1	1777	1426	tgcctctcctctctctctctctct	21769	454581	—	—	—
3814	ADPRL12	NM_005484.2	1426	1518	ctgacatccagctctctctctctct	28549	460286	—	—	—
3815	HMGB1	NM_005487.2	1518	1533	tgattttgagcacttgatgataa	28550	460288	see also 3815 line	—	—
3816	HMGB1	NM_005487.2	1533	897	gctatgctgctgctgctgctgct	333865	709620	—	—	—
3817	RANBP9	NM_005493.2	897	945	aaagatgacagctctgctgctgct	333867	709624	see also 3817 line	—	—
3818	RANBP9	NM_005493.2	945	862	taccgcaacattgctctctctct	333869	709627	see also 3817 line	—	—
3819	RANBP9	NM_005493.2	862	1777	ganaaaactctctctctctctct	333869	709649	see also 3817 line	—	—
3820	RANBP9	NM_005493.2	1777	1811	ctctatccatgctctctctctct	333900	709650	see also 3817 line	—	—
3821	RANBP9	NM_005493.2	1811	1819	ctctatccatgctctctctctct	333901	709651	see also 3817 line	—	—
3822	RANBP9	NM_005493.2	1819	1821	atgacacgaatgagagctgctg	333902	709652	see also 3817 line	—	—
3823	RANBP9	NM_005493.2	1821	622	gactgtagagctctctctctct	333903	709653	see also 3817 line	—	—
3824	RANBP9	NM_005493.2	622	1014	tgctctctctctctctctctct	333915	709659	see also 3817 line	—	—
3825	SMC4L1	NM_005496.2	1014	1741	gagctgagctgctctctctctct	333923	452564	cell cycle	—	—
3826	SMC4L1	NM_005496.2	1741	1749	gagctgagctgctctctctctct	333943	452577	see also 3826 line	—	—
3827	SMC4L1	NM_005496.2	1749	1789	gctgagctgctctctctctctct	333946	452580	see also 3826 line	—	—
3828	SMC4L1	NM_005496.2	1789	1741	gctgagctgctctctctctctct	333961	452594	see also 3826 line	—	—
3829	SMC4L1	NM_005496.2	1741	3288	tgagcagagctgctctctctctct	333962	452595	see also 3826 line	—	—
3830	SMC4L1	NM_005496.2	3288	3262	tgagcagagctgctctctctctct	333963	452596	see also 3826 line	—	—
3831	SMC4L1	NM_005496.2	3262	3979	tgagcagagctgctctctctctct	333975	452609	see also 3826 line	—	—
3832	SMC4L1	NM_005496.2	3979	809	gagctgagctgctctctctctct	334015	452644	see also 3826 line	—	—
3833	SMC4L1	NM_005496.2	809	815	tgctctctctctctctctctctct	334016	452646	see also 3826 line	—	—
3834	SMC4L1	NM_005496.2	815	854	gagctgagctgctctctctctct	334030	452672	see also 3826 line	—	—
3835	SMC4L1	NM_005496.2	854	864	gagctgagctgctctctctctct	263767	647341	connexon channel	—	—
3836	GJA7	NM_005497.1	864	854	gagctgagctgctctctctctct	263769	647345	see also 3836 line	—	—
3837	GJA7	NM_005497.1	854	148	ctctctctctctctctctctctct	235620	620532	kinase, related	—	—
3838	GJA7	NM_005497.1	148	774	ctctctctctctctctctctctct	235621	620533	see also 3839 line	—	—
3839	UBA2	NM_005498.1	774	588	tgacacatgagctgctgctgctg	235653	620556	see also 3839 line	—	—
3840	UBA2	NM_005498.1	588	2224	atctctctctctctctctctctct	67961	490883	sterol transporter	—	—
3841	ABCA1	NM_005502.2	2224	6914	gagctgagctgctgctgctgctg	68038	490978	see also 3842 line	—	—
3842	ABCA1	NM_005502.2	6914	2422	gagctgagctgctgctgctgctg	128951	650534	see also 3842 line	—	—
3843	ABCA1	NM_005502.2	2422	588	gagctgagctgctgctgctgctg	67930	490841	—	—	—
3844	ABCA1	NM_005502.2	588	2224	gagctgagctgctgctgctgctg	67961	490883	see also 3842 line	—	—
3845	ABPA2	NM_005503.2	2224	588	gagctgagctgctgctgctgctg	68038	490978	see also 3842 line	—	—
3846	ABPA2	NM_005503.2	588	2422	gagctgagctgctgctgctgctg	128951	650534	see also 3842 line	—	—

atherosclerosis (粥状硬化症), high density
lipoprotein deficiency (無アルブミン血症)
症, Alzheimer disease (アルツハイマー病)

3846	BCAT1	NM_005504.3	707	acctcaacatgataagatcat	217957	605905	cell cycle	branched-chain amino acid aminotransferase	hyperleucine-isoleucineemia(高ロイシン・イソロイシン血症)
3847	SCAR2	NM_005506.2	1644	cacacacatccctccatcatca	251182	637521	receptor activity, signal transduction	receptor	-
3848	CCR4	NM_005508.2	232	tgtctgtccctgtccaaatc	124543	528339	-	C-C chemokine receptor	-
3849	HMGCS2	NM_005518.1	176	tccctctgcccaacaaagact	216547	603785	-	hydroxymethylglutaryl-CoA synthase	hydroxymethylglutaryl-CoA synthase deficiency(ヒドロキシメチルグルタルイル-CoA合成酵素欠損症)、HMG-CoA synthase-2 deficiency(HMG-CoA合成酵素2次損症)
3850	HNRP1	NM_005520.1	185	ataggctctcaagctattcttttc	49032	484598	-	poly(U) binding	-
3851	HNRP1	NM_005520.1	186	tggctctcaagctattcttttc	49033	484599	see also 3850 line	-	-
3852	HNRP1	NM_005520.1	189	tgctcaagctattctttctcatct	49034	484600	see also 3850 line	-	-
3853	HNRP1	NM_005520.1	635	gaactgaagctgaagctattat	49036	484603	transcription, regulat	-	-
3854	TLX1	NM_005521.2	1312	cggctctcaacagtgaaactgg	13426	449577	transcription, regulat	transcription factor	lymphoma(リンパ腫)
3855	TLX1	NM_005521.2	1716	cccttgccaaagctctcaaatg	13429	449581	see also 3854 line	-	-
3856	HOXA1	NM_005522.3	493	caccacacccaggtatctctg	5004	444667	or	-	-
3857	HOXA11	NM_005523.4	429	caagtctgtccaatctctatgc	5030	444694	transcription, regulat	-	-
3858	HOXA11	NM_005523.4	481	agcttttcaacattttcttga	5031	444696	see also 3857 line	transcription factor	-
3859	HOXA11	NM_005523.4	778	tggcaccaccccccataaagp	5032	444697	see also 3857 line	-	-
3860	HSD11B1	NM_005525.2	143	atggctactctctcctattctgc	219961	607378	-	-	cortisone reductase deficiency(コルチゾン還元酵素欠損症)、obesity(肥満)
3861	ISLR	NM_005545.2	1383	ggctctctatagctgttcaaatg	131936	704094	-	-	-
3862	KARS	NM_005546.1	778	ccgtctatagctatcacatca	62933	484767	-	nucleic acid binding	-
3863	KARS	NM_005546.1	837	tgaactcccatgatacatc	62938	484770	see also 3862 line	-	-
3864	KARS	NM_005546.1	1061	tacttggctctgcagatcatca	62953	484775	see also 3862 line	-	-
3865	LAM1	NM_005559.2	8788	cgagatgcagctctcttccaag	290673	537070	-	-	-
3866	LAM2	NM_005562.1	2907	atgggcaatgccactttttatga	177607	570691	-	-	epidermolysis bullosa(表皮水疱症)
3867	LAM2	NM_005562.1	2909	ggcgaatgccactttttatga	177608	570692	see also 3866 line	-	-
3868	LAM2	NM_005562.1	3628	tgcctccatggctctcatatc	177616	570698	see also 3866 line	mammosome binding	-
3869	LAM1	NM_005570.2	148	atcgcctctgtctgataaatc	174906	694628	-	coagulation factor(凝固因子)	-
3870	LAM1	NM_005570.2	151	gccttctgataaatcacaac	174907	694630	see also 3869 line	-	-
3871	LAM1	NM_005570.2	663	atgctcaaatatgcttttacaac	174922	694655	see also 3869 line	-	-
3872	LAM1	NM_005570.2	1028	aggcagaatgcctttattctg	174928	694659	see also 3869 line	-	-
3873	LAM1	NM_005573.2	915	caattgacatgaataacttctg	291462	666471	-	structural molecule	-
3874	LAM1	NM_005573.2	919	tacacatgaataacttcttca	291463	666472	see also 3873 line	-	-
3875	LAM1	NM_005573.2	1793	tgaagacatcaactcaattta	291483	666488	see also 3873 line	-	-
3876	LAM2	NM_005574.2	1359	tccggctgaaggaatgctat	310695	690247	-	-	leukemia(白血病)
3877	LNPEP	NM_005575.1	1295	tccctccatgaagaaactgattt	157309	555171	-	zinc binding	-

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3878	UNPEP	NM_005578.1	1596	tgcgtctgcgtttgaacacatg	157318	555180	see also 3877 line	-	pulmonary chondroid hamartoma(肺過誤腫)、 lipomatous tumors(脂肪腫性腫瘍)
3879	LPP	NM_005578.1	1636	tctctgcgcctctgcataaa	281521	649456	-	-	
3880	ALDH8A1	NM_005589.2	663	tgcctcatgccctcttgagtt	225312	611700	-	methylenalate- semialdehyde dehydrogenase (acylating)	-
3881	ALDH8A1	NM_005589.2	1043	acgtctcatgcctcttcaaca	225325	611711	see also 3880 line	-	
3882	MUSK	NM_005592.1	889	atgcatagcatacaataagcatg	92160	508889	receptor activity, kinase, related,	-	-
3883	NFA	NM_005595.1	525	ctgcctccgcacgcagataaag	7839	446634	transcription_regulat	-	-
3884	NFA	NM_005595.1	584	aagattctcctcgaataact	7842	446636	see also 3883 line	-	-
3885	NFA	NM_005595.1	1214	acgtcacgcactgctttcaaca	7855	446643	see also 3883 line	-	-
3886	NFB	NM_005596.1	279	gtccgtgcacattgcctatactg	7857	446646	transcription_regulat	-	-
3887	NFB	NM_005596.1	313	atcgtgcacacatgcacagcttt	7859	446647	or	translation regulator	-
3888	NFB	NM_005596.1	314	actctgcacacatgcacagcttt	7860	446648	see also 3888 line	-	-
3889	NFB	NM_005596.1	316	ctgcacacacatgcacagcttt	7861	446649	see also 3888 line	-	-
3890	NFB	NM_005596.1	758	taactgcacacatgcacagcttt	7873	446654	see also 3888 line	-	-
3891	NFB	NM_005596.1	765	taactgcacacatgcacagcttt	7874	446655	see also 3888 line	-	-
3892	NT1	NM_005600.1	324	tctcgtgcacattgcctactctc	203963	594354	-	-	-
3893	PTK2	NM_005607.3	427	aagatgcacacatgcacacagtt	98455	512844	kinase, related,	-	-
3894	PTK2	NM_005607.3	829	aagcgtttttctcactagcttt	98465	512861	signal transduction	-	-
3895	PTK2	NM_005607.3	860	ctgcacacacacacacacacaga	98467	512862	see also 3893 line	-	-
3896	PTK2	NM_005607.3	1033	ctgcacacacacacacacacaga	98479	512865	see also 3893 line	-	-
3897	PYGM	NM_005609.1	3116	atgcacacatgcacgttttaaatg	211655	600009	transferase, transferring	glycosyl groups	McArdle disease(マッカードル病)
3898	RBL2	NM_005611.2	324	tgtctatcatctgctctatag	37637	465566	cell cycle, transcription_regulat	protein binding	endometrial cancer(子宮癌), lung cancer(肺癌), neuroblastoma(神経芽細胞腫), ocular melanoma(眼メラノーマ)
3899	RBL2	NM_005611.2	2480	aagtcacacacacacacacacac	37709	465569	see also 3898 line	-	-
3900	REST	NM_005612.3	1414	atgcgtcacacacacacacacac	276093	702077	transcription_regulat	-	-
3901	SAH	NM_005622.1	557	ctgcacacacacacacacacac	23210	617532	or	-	-
3902	SAH	NM_005622.1	558	tctgcacacacacacacacacac	23211	617533	see also 3901 line	-	-
3903	SGK	NM_005627.2	708	aacatgcatttatgcacacacac	100303	514618	kinase, related, apoptosis	protein serine/threonine	-
3904	SOS1	NM_005633.2	1971	agctgcctgcctacacacacacac	40525	487948	signal transduction	guanylate nucleotide release factor	gingival fibromatosis(歯茎線維腫), diabetes(糖尿病)

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3905	ISOS1	NM_005633.2	2746	ttctcaaacctcagctctcttaa	40545	467965	see also 3904 line		
3906	SOS1	NM_005633.2	2748	ttctcaaacctcagctctcttaa	40546	467970	see also 3904 line		
3907	SOS1	NM_005633.2	3111	ttctcaaacctcagctctcttaa	40558	467980	see also 3904 line		
3908	SOS1	NM_005633.2	3661	aggcaacacgtctctctctaa	40570	467995	see also 3904 line		
3909	SVBL1	NM_005633.3	202	gagcaacacgtctctctctaa	271092	702489	or	transcription regulator	protein transporter
3910	SVBL1	NM_005633.3	212	ctcctcagctctctctctctaa	271093	702490	see also 3909 line		
3911	SVBL1	NM_005633.3	212	ttctcagacacgtctctctaa	271094	702491	see also 3909 line		
3912	SVBL1	NM_005633.3	644	attctctcagcagctctctaa	271100	702507	see also 3909 line		
3913	SVBL1	NM_005633.3	648	ttctcagacacgtctctctaa	271101	702508	see also 3909 line		
3914	SVY1	NM_005633.1	1143	ttctcagcagcagctctctctaa	173134	657504	-	transporter	-
3915	TAI7	NM_005642.2	1702	ttctcagcagcagctctctctaa	112471	699067	or	transcription regulator	TFIID complex
3916	TAI11	NM_005643.2	437	ctgaacacctttgaactctatc	41486	468574	or	transcription regulator	protein binding
3917	TAI12	NM_005644.2	333	aggtattgaccacagagaaatta	41503	468595	or	transcription regulator	protein binding
3918	TAI12	NM_005644.2	567	aagaatcaccacccacacaaaa	41505	468590	see also 3917 line	transcription regulator	-
3919	TCF20	NM_005650.1	5547	ggctctctcttctctctctctctc	41805	468847	or	transcription regulator	-
3920	TD02	NM_005651.1	281	atctcactcctcctcactctctc	224360	610841	-	typtophan 2, 3 dioxynase	alcoholism(アルコール依存症)
3921	TERF2	NM_005652.2	1566	accgcaaacactctctctctctaa	20737	469021	cell cycle	DNA binding	-
3922	TERF2	NM_005652.2	1567	accgcaaacactctctctctctaa	20738	469023	see also 3921 line	-	-
3923	TERF2	NM_005652.2	1591	atctcagcagcagcagcagcagc	20739	469027	see also 3921 line	-	-
3924	TP53BP1	NM_005657.1	302	atctcagcagcagcagcagcagc	20870	541638	or	transcription regulator	translation regulator
3925	TP53BP1	NM_005657.1	2239	ttctcactctctctctctctctct	20915	541679	see also 3924 line	-	-
3926	TP53BP1	NM_005657.1	4658	ttctcactctctctctctctctct	20952	541714	see also 3924 line	-	-
3927	TP53BP1	NM_005657.1	5600	ttctcactctctctctctctctct	20971	541728	see also 3924 line	-	-
3928	TP53BP1	NM_005657.1	5869	ctctgaagcagcagcagcagcagc	20979	541732	see also 3924 line	-	-
3929	UFD1L	NM_005659.3	672	ttctcagcagcagcagcagcagc	190756	670625	-	ubiquitin-specific protease	catch 22 syndrome(-)
3930	EV15	NM_005665.2	166	agcctctgagcagcagcagcagc	131157	696542	-	-	-
3931	EV15	NM_005665.2	1766	caagcagcagcagcagcagcagc	131187	696567	see also 3930 line	-	-
3932	RNF103	NM_005667.2	1545	caagcagcagcagcagcagcagc	319777	699481	-	Alzheimer disease(アルツハイマー病)	-
3933	RNF103	NM_005667.2	1823	ttctcactctctctctctctctct	319785	699495	see also 3932 line	-	-
3934	RNF103	NM_005667.2	1892	ccctcactctctctctctctctct	319788	699498	see also 3932 line	-	-
3935	RNF103	NM_005667.2	2020	aaacgtttgtgtgtgtgtgtgtgt	319786	699504	see also 3932 line	-	-
3936	RNF103	NM_005667.2	2021	aaacgtttgtgtgtgtgtgtgtgt	319787	699505	see also 3932 line	-	-
3937	RNF103	NM_005667.2	2363	ttctcactctctctctctctctct	319809	699518	see also 3932 line	-	-
3938	SIAT8D	NM_005668.3	623	ttctcactctctctctctctctct	213075	600928	-	-	-
3939	SIAT8D	NM_005668.3	1014	ttctcactctctctctctctctct	213082	600935	see also 3938 line	-	-
3940	SIAT8D	NM_005668.3	1017	ttctcactctctctctctctctct	213083	600936	see also 3938 line	-	-

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3941	SIAT8D	NM_005668.3	1020	atgaatggttgattcaatt	213084	600438	see also 3938 line		
3942	D8S2298E	NM_005671.1	763	tcgaggaacagatgaactct	520502	802421	-	-	-
3943	RSN10	NM_005673.3	898	tcgaggaacagatgaactct	53983	485659	-	-	-
3944	RSN10	NM_005673.3	898	gcgctctgagattgagcaat	53984	485659	see also 3943 line	organic anion transporter	lung cancer (肺癌)
3945	ABCC5	NM_005688.1	835	cacgcgctgagattgaatc	70502	492306	-	-	-
3946	ABCC5	NM_005688.1	1042	tggcgcgatttaataattc	70508	492306	see also 3945 line	-	-
3947	ABCC5	NM_005688.1	1162	gaacccctcattctgagtcg	70527	492334	see also 3945 line	-	-
3948	ABCC5	NM_005688.1	4182	gaacccctcattctgattta	70572	492372	see also 3945 line	-	-
3949	ABCB6	NM_005689.1	2206	ctctgcctcttcgaatagtg	69844	492006	-	-	-
3950	DNM1L	NM_005690.2	1226	gtgcgctcaacattgacatt	108805	519181	-	-	-
3951	DNM1L	NM_005690.2	1882	cagcgcctcttgagttattga	108826	519199	see also 3950 line	-	-
3952	DNM1L	NM_005690.2	1958	tcgcaaaagcagtaagatttt	108832	519204	see also 3950 line	-	-
3953	ABCC9	NM_005691.1	422	ggcgaatgcctctatacaaa	70649	492446	receptor activity	-	diabetes mellitus (糖尿病), diabetes (糖尿病)
3954	ABCC9	NM_005691.1	2043	ggcgaatgattagctacatt	70700	492494	see also 3953 line	-	-
3955	ABCC9	NM_005691.1	4235	atgcagcctctgtttgattct	70772	492551	see also 3953 line	-	-
3956	ABCF2	NM_005692.3	1029	tacgtaataattgatactag	71026	492504	-	-	-
3957	ABCF2	NM_005692.3	1338	gccttcattctcaaaatactag	71033	492815	see also 3956 line	-	-
3958	ABCF2	NM_005692.3	1489	gtcaagataggcgttaacatca	71035	492820	transcription, regulation	-	-
3959	NR1H3	NM_005693.1	1071	atgaatgaactgcacactaaga	8249	447025	or, LXRalpha/RXRalpha	-	atherosclerosis (粥狀硬化症)
3960	PCD7	NM_005703.1	1387	cagcactatcttgatgaatcgc	334195	617351	apoptosis	-	-
3961	GPC6	NM_005708.2	1759	gcgcgcctctgcagatgaataa	248424	633744	receptor activity	-	-
3962	COL4A3B	NM_005713.1	527	ggcgaatgccttgagctgtttg	205528	596297	kinase related	-	-
3963	COL4A3B	NM_005713.1	530	aggatcgttgagctgtttgata	205529	596298	see also 3962 line	-	-
3964	COL4A3B	NM_005713.1	533	atcgttgagctgttgatgaat	205530	596299	see also 3962 line	-	-
3965	COL4A3B	NM_005713.1	1179	aacctcttcctcattgatactg	205549	596323	see also 3962 line	-	-
3966	COL4A3B	NM_005713.1	1827	aactatgaataactctcagctgg	205558	596347	see also 3962 line	-	-
3967	COL4A3B	NM_005713.1	1953	acagcgtctcactcgaataatgac	205564	596355	see also 3962 line	-	-
3968	UST	NM_005715.1	529	cagcgtctctcaaatatgacaaa	217824	796007	-	-	-
3969	ARPC4	NM_005716.2	359	tcgcgaatcagacactctttatc	286848	659218	-	structural constituent of cytoskeleton	-
3970	TMA5P9	NM_005723.2	826	ctgctgattgagaactaatatt	309537	675447	-	-	-
3971	TMA5P8	NM_005724.4	568	cagcattgagaagctgttaaga	309520	693457	-	-	-
3972	TSPAN-2	NM_005725.2	50	ggcctcgcgctcgaatgaacc	309554	691504	-	-	-
3973	RAD50	NM_005732.2	511	aaagcaaacattgaattctct	98887	513032	-	-	-
3974	RAD50	NM_005732.2	513	ggcgaacattctgaattgtctaa	98888	513033	see also 3973 line	-	-
3975	RAD50	NM_005732.2	2748	atgcctgcagcagctgttaacata	98771	513092	see also 3973 line	-	-
3976	KIF20A	NM_005733.1	2358	ttagctgactcttaataaac	87329	505402	-	-	-
3977	HIPK3	NM_005734.2	1047	gtcgcgcactctgtctaaaga	84854	503553	kinase related	-	-
3978	HIPK3	NM_005734.2	2275	cagcgtcctcctcaaatgaagaaa	84874	503566	see also 3977 line	-	-

3979	HPK3	NM_005734.2	3258	taggtttacaggtatcatctta	84905	503803	see also 3977 line			
3980	ACTR1A	NM_005736.2	100	gacacagatgcggtgtgtatata	286293	659088	-		structural constituent of cytoskeleton	-
3981	ACTR1A	NM_005736.2	103	aacagatccggtgtgtatataac	286294	659089	see also 3980 line			
3982	ZNF263	NM_005741.3	884	cttgaagagaaagagacattatct	15185	450102	transcription_regulat			
3983	ZNF263	NM_005741.3	1025	ggatcagagatctactaaagagg	15188	450105	or see also 3982 line		transcription factor	-
3984	ARIH1	NM_005744.2	720	agcactctcaattgggtataaaga	125887	670735	-		ubiquitin-like protein ligase	-
3985	ARIH1	NM_005744.2	792	gagtgctgaatgaattccaag	125888	670737	see also 3984 line			
3986	ARIH1	NM_005744.2	942	catgtcgtgagtggaatttaac	125895	670743	see also 3984 line			
3987	ARIH1	NM_005744.2	1459	atgatcttcttggtacaactgt	125913	670761	see also 3984 line			
3988	ARIH1	NM_005744.2	1717	gtctgacacactcatgcact	125916	670765	see also 3984 line			
3989	ARIH1	NM_005744.2	1736	caactatgcttgcattcttaac	125919	670766	see also 3984 line			
3990	ARIH1	NM_005744.2	1832	ggactacttaacagagatttt	125921	670767	see also 3984 line			
3991	ARIH1	NM_005744.2	1833	ggactacttaacagagatttt	125922	670768	see also 3984 line			
3992	ARIH1	NM_005744.2	1843	aacagatattccaagattct	125923	670769	see also 3984 line			
3993	ARIH1	NM_005744.2	1913	gagtcacagagattttttac	125926	670773	see also 3984 line			
3994	ARIH1	NM_005744.2	1916	tcacagagagattttttacac	125927	670774	see also 3984 line			
3995	BCAP31	NM_005745.5	371	aagtgagatctccaggaatcc	267835	650675	apoptosis			
3996	TOB1	NM_005749.2	881	aagtgatgctccaggaatgagtc	136824	526164	-		protein binding	-
3997	GPB64	NM_005756.1	507	tgagtgctcgtctcttaagtant	243357	630846	gpcr, receptor, activity, signal transduction			
3998	GPB64	NM_005756.1	2325	gaatatatccacagataactatg	243406	630905	see also 3997 line			
3999	GPB64	NM_005756.1	2459	tgcttgacatccagatcattcttt	243410	630909	see also 3997 line			
4000	GPB64	NM_005756.1	2488	ctggttgagctctcttggaattaa	243412	630910	see also 3997 line			
4001	GPB64	NM_005756.1	2489	tggttgagctctcttggaattaa	243413	630911	see also 3997 line			
4002	GPB64	NM_005756.1	2731	tgagtgagctctctctttttttg	243422	630922	see also 3997 line			
4003	GPB64	NM_005756.1	2790	aecgtactaatcttggtttaaaga	243424	630923	see also 3997 line			
4004	GPB64	NM_005756.1	2792	ctgctactaatcttggtttaaaga	243425	630924	see also 3997 line			
4005	GPB64	NM_005756.1	3083	agctggagagctctacactttt	243435	630935	see also 3997 line			
4006	MBNL2	NM_005757.3	1332	gagttgcacaggaagaaactgtcc	64057	484942	-			
4007	MBNL2	NM_005757.3	1422	acgttaacacttttttgattta	64058	484943	see also 4006 line			
4008	MBNL2	NM_005757.3	1428	accgttttgatgaatcacataa	64059	484944	see also 4006 line			
4009	MBNL2	NM_005757.3	1453	gagttgcacaggaagaaactgtcc	64060	484946	see also 4006 line			
4010	MBNL2	NM_005757.3	1874	gacacagcaatcagatattct	64067	484947	see also 4006 line			
4011	ABI-2	NM_005759.3	699	ctcaatgatacaattgatcac	21073	812048	kinase related			-
4012	ABI-2	NM_005759.3	704	ctctacaaatatttgatttacc	21075	812049	see also 4011 line			
4013	ABI-2	NM_005759.3	723	tactacagcccaacgattatg	21076	812050	see also 4011 line			
4014	ABI-2	NM_005759.3	724	actagagacacacgagataatg	21077	812051	see also 4011 line			
4015	ABI-2	NM_005759.3	770	aagtgagctctctgattcgaag	21078	812052	see also 4011 line			
4016	ABI-2	NM_005759.3	995	ggagtgctctgctccatagag	21083	812058	see also 4011 line			

Accession	Gene	Protein	Function	Location	Reference
4055	PRG4	LOC100289211	157	aggactcgaacgacgagatgaa	302988
4056	PRKN	NM_005807.1	2590	aggcactgaacgacgacgttgc	97478
4057	PRKN	NM_005813.2	3090	agctcgtcgtgacgacgttgc	97488
4058	PRKN	NM_005813.2	3094	agcattggaagcgttaccatgc	97490
4059	PRKN	NM_005813.2	3099	tggaacgcttaccatcacatc	97491
4060	DSR1L1	NM_005822.1	258	taccacgaacgacgacgacgaa	152609
4061	RASGRP2	NM_005825.2	547	ccgcacgaacgacgacgacgaa	151868
4062	HNRP	NM_005826.2	93	agctacgaacgacgacgacgaa	52137
4063	HNRP	NM_005826.2	107	agctacgaacgacgacgacgaa	52138
4064	HNRP	NM_005826.2	108	tgatgacgacgacgacgacgaa	52139
4065	HNRP	NM_005826.2	241	ccgacgacgacgacgacgacgaa	52143
4066	HNRP	NM_005826.2	243	gacgacgacgacgacgacgacgaa	52144
4067	SRRM1	NM_005839.1	1251	gacgacgacgacgacgacgacgaa	47361
4068	SRRM1	NM_005839.1	1252	agcgttcaaacgacgacgacgaa	47362
4069	PRX5	NM_005853.2	913	agcctcgaacgacgacgacgacgaa	5545
4070	PRX5	NM_005853.2	914	gctcgaacgacgacgacgacgacgaa	5546
4071	PRX5	NM_005853.2	918	cagcgaacgacgacgacgacgacgaa	5547
4072	ZMP-ST124	NM_005857.2	1000	tttttgacgacgacgacgacgacgaa	184945
4073	AKAP8	NM_005858.2	139	ggccacgacgacgacgacgacgaa	21283
4074	STAG1	NM_005862.1	420	cagcttgcacgacgacgacgacgaa	307870
4075	STAG1	NM_005862.1	740	gagcttgcacgacgacgacgacgaa	307879
4076	STAG1	NM_005862.1	1047	gagcttgcacgacgacgacgacgaa	307890
4077	STAG1	NM_005862.1	1520	gagcttgcacgacgacgacgacgaa	307901
4078	STAG1	NM_005862.1	1966	gagcttgcacgacgacgacgacgaa	307914
4079	STAG1	NM_005862.1	2394	ttttgacgacgacgacgacgacgaa	307929
4080	STAG1	NM_005862.1	2668	tccttcacgacgacgacgacgacgaa	307938
4081	STAG1	NM_005862.1	3851	cagctcgaacgacgacgacgacgaa	307964
4082	STAG1	NM_005862.1	3866	gagctcgaacgacgacgacgacgaa	307965
4083	STAG1	NM_005862.1	4103	gagctcgaacgacgacgacgacgaa	307974
4084	STAG1	NM_005862.1	4131	cagctcgaacgacgacgacgacgaa	307976
4085	SAP18	NM_005870.3	79	ggcgttgcacgacgacgacgacgaa	113297
4086	SHNDG1	NM_005871.2	766	gcgcgttgcacgacgacgacgacgaa	47293
4087	AREG1	NM_005876.3	2799	gcgcgttgcacgacgacgacgacgaa	308368
4088	DNAJ2	NM_005880.2	350	agggcgttgcacgacgacgacgacgaa	293307
4089	DNAJ2	NM_005880.2	924	gacgacgacgacgacgacgacgacgaa	293325
4090	DNAJ2	NM_005880.2	1007	cagctcgaacgacgacgacgacgaa	293330
4091	DNAJ2	NM_005880.2	1212	ggcgttgcacgacgacgacgacgaa	293338
4092	BCXDK	NM_005881.1	1135	cacctcgaacgacgacgacgacgacgaa	73978

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4093	TEB4	NM_005985.2	581	tctctcaagcagaactatctg	334366	776403	-	-	-
4094	TEB4	NM_005985.2	1019	agctttatggcgcactattttt	334376	776410	see also 4093 line	-	-
4095	TEB4	NM_005985.2	1211	tgcacatcaacgcagatatttt	334383	776419	see also 4093 line	-	-
4096	TEB4	NM_005985.2	1668	tgtctctcctatgctcatttta	334397	776434	see also 4093 line	-	-
4097	TEB4	NM_005985.2	1869	tgtctctcctatgctcatttta	334398	776435	see also 4093 line	-	-
4098	GOLGA3	NM_005995.2	1119	tgtctctcctatgctcatttta	273958	555635	-	isocholesterol dehydrogenase (NADP+)	-
4099	IDH1	NM_005996.2	290	caagatcatttggcattgatt	220238	607499	-	-	-
4100	IDH1	NM_005996.2	644	atcaatacagcagcaactgattt	220254	607507	see also 4099 line	-	-
4101	IDH1	NM_005996.2	651	caagacaactgatttttcttct	220255	607508	see also 4099 line	-	-
4102	IDH1	NM_005996.2	680	ctggaagatcagagaaactaac	220256	607509	see also 4099 line	-	-
4103	IDH1	NM_005996.2	1335	aggaactgtctcttgcattaaa	220267	607525	see also 4099 line	-	-
4104	M1T1	NM_005996.2	1340	caacttgcctccattgattct	325779	706543	-	-	-
4105	M1T1	NM_005996.2	1736	tgcacaagcttctcaattgaat	325793	706554	see also 4104 line	-	-
4106	M1T1	NM_005996.2	2182	atggatatacagcaaatctcaag	325806	706563	see also 4104 line	-	-
4107	M1T1	NM_005996.2	2282	gaagatctgcgaatgaacact	325808	706565	see also 4104 line	-	-
4108	M1T1	NM_005996.2	2296	atgcaactcagcaaatgaatta	325809	706566	see also 4104 line	-	-
4109	M1T2	NM_005996.2	91	caacagattactcaaatgtgact	334439	697882	-	transcriptional activator	ovarian cancer (卵巢恶性肿瘤)
4110	MADH1	NM_005900.1	1384	aaccggaattccactatgaaaa	253557	537318	-	-	-
4111	MADH2	NM_005901.2	685	tgtgaactcgaatatgctttt	133677	526398	signal transduction	-	-
4112	MADH2	NM_005901.2	1235	tgtcgaactcgaatatgctttt	133703	526412	transcription regulator	protein binding	colorectal cancer (大腸癌), lung cancer (肺癌), colorectal cancer (结肠恶性肿瘤)
4113	MADH5	NM_005903.4	1033	gcctatacgaactatgactaa	253585	537339	transcription regulator	transcriptional activator	-
4114	MADH5	NM_005903.4	1227	atctctatcctatgctatgtag	253596	537347	see also 4113 line	-	-
4115	MADH5	NM_005903.4	1230	tctcactcgttgctatgctgtag	253597	537348	see also 4113 line	-	-
4116	MADH5	NM_005903.4	1297	tgtcgaatgttaactctgaaa	253602	537353	see also 4113 line	-	-
4117	MADH5	NM_005903.4	1300	tgtcgaatgttaactctgaaa	253603	537354	see also 4113 line	-	-
4118	MADH5	NM_005903.4	1426	caagcagtagcagcaacttcaa	253606	537360	see also 4113 line	-	-
4119	MADH7	NM_005904.1	580	caagcactcgtctctcaagaac	133722	669029	kinase related, transcription regulator	Smad3/Smad4 complex	-
4120	MADH7	NM_005904.1	581	acgcactcgtctctcaagaac	133723	669030	see also 4119 line	-	-
4121	MADH7	NM_005904.1	1194	agctcaactcagcaacacaggt	133736	669032	see also 4119 line	-	-
4122	MAN1A1	NM_005907.2	1119	gaagcactcaacgaactgtttt	334500	550008	-	mannosyl-oligosaccharide 1, 2-alpha-	-
4123	MAN1A1	NM_005907.2	1121	ggcactcaacgaactgttttgg	334502	550009	see also 4122 line	mannosidase	-
4124	MAN1A1	NM_005907.2	1803	aggcctttctctcaactctct	334510	550024	see also 4122 line	-	-
4125	MAP1B	NM_005908.2	473	ctggaactctgaagattctct	291588	675460	-	-	-

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4126	MAP1B	NM_005090.2	3455	acgagaaactctcaattcatt	291642	675408	see also 4125 line			
4127	MAP1B	NM_005090.2	3456	cggagaaactctctcaattc	291643	675409	see also 4125 line			
4128	MAP1B	NM_005090.2	3544	gcagagactctctcaattc	291645	675500	see also 4125 line			
4129	MAP1B	NM_005090.2	5058	atgccacagccagctcaatt	291680	675541	see also 4125 line			
4130	MAP1B	NM_005090.2	5059	tgcctcaagacgagctcaattc	291681	675545	see also 4125 line			
4131	MAP1T									Parkinsonism-dementia complex(パーキンソン病)
4132	MAP1T	NM_005910.2	1144	gcgcagctgtcaaatagctcac	287475	537443	-			未定候群, Alzheimer disease(アルツハイマー病), dementia(痴呆), disinhibition-dementia-Parkinsonism-anoyetoxic complex(KDPAC症), pallidopigmentary degeneration(-), Pick disease of brain(ピック病), Wilhelmsen-Lynch disease (WLD)(ウィルヘルムセン-リンチ病), Parkinson disease(パーキンソン病), progressive supranuclear palsy (PSP)(進行性核上性麻痺)
4133	MC4R	NM_005912.1	497	ttgagatctcaatagctctatc	287476	537444	see also 4131 line			
4134	MC4R	NM_005912.1	498	ttgagatctcaatagctctatc	176439	625820	signal transduction			
4135	MC4R	NM_005912.1	627	ttctctctatgctcaatgcttc	176440	625821	see also 4133 line			
					176441	625822	see also 4133 line			
4136	MC4R	NM_005915.4	1275	cagctaaagacccattctccacg	31949	481574	or			
4137	MC4R	NM_005915.4	1589	gacacatgacagctcaaatca	31959	481584	see also 4138 line			
4138	MDH1	NM_005917.2	91	cagctgtccaaatgcaattca	220727	697769	-			
4139	MAP3K4	NM_005922.1	679	tcagagctgagctctcaatgacg	89300	507181	kinase related			
4140	MAP3K4	NM_005922.1	3285	aagagatgtctgttgctgtct	89377	507225	see also 4139 line			
4141	MAP3K5	NM_005923.3	3783	tctctggagctcaatcaatcag	89514	507341	kinase, related, apoptosis			
4142	MEP1B	NM_005925.1	666	cagtaagcaactcaatcaaatc	157796	558408	-			
4143	MEP1B	NM_005932.1	685	ggacactggacactcaatcttaa	157935	558468	-			
4144	MLL76	NM_005937.1	333	gcctcatgctgctctcaacagga	32872	481869	transcription_regulat			
4145	MLL76	NM_005937.1	335	ctcatgctgctctcaacagacc	32873	481870	see also 4144 line			
4146	MLL77	NM_005938.1	937	tcctgtccagcaatcattcaaat	7081	445817	transcription_regulat			
4147	MMP16	NM_005941.2	273	caacgactgagccacagcaatca	158143	558679	or, cell cycle			
4148	MMP16	NM_005941.2	648	aacgtgtgtgtgtgtgtgtgtgt	158153	558686	see also 4147 line			
4149	MMP16	NM_005941.2	1236	atgtgttccatcaatcaatct	158166	558690	see also 4147 line			
4150	MMP16	NM_005941.2	1242	accacacaaatctctctctct	158167	558693	see also 4147 line			
4151	MMP16	NM_005941.2	1372	accgtgttccatcaatcaatct	158175	558708	see also 4147 line			
4152	MMP16	NM_005941.2	1375	tggtctctctctctctctctct	158178	558707	see also 4147 line			
4153	MMP16	NM_005941.2	1413	ttctctctctctctctctctct	158178	558710	see also 4147 line			

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4154	MMPT16	NM_005941.2	1890	ccgcgcacacacactgactgtaaa	158195	558719	see also 4147 line				
4155	MMPT16	NM_005941.2	1904	tactgtcaacgctctctatgcagaa	158196	558722	see also 4147 line	transcription_regulat			
4156	MTF1	NM_005955.1	1183	cgacatcatcttgatcaactg	7168	446120	or	transcription factor	-		
4157	MTF1	NM_005955.1	1641	ggccacacacaaagactactatga	7167	446127	see also 4156 line				
4158	MTF1	NM_005955.1	1699	gtcccaactctgtctcaactaat	7198	446128	see also 4156 line				
4159	MTF1	NM_005955.1	1701	gtcccaactctctctcaactata	7199	446129	see also 4156 line				
4160	MTF1	NM_005955.1	1701	gtcccaactctctcaactata	7200	446130	see also 4156 line				
4161	MTF1	NM_005955.1	1779	gtatgggagacagaaactaca	7201	446132	see also 4156 line				
4162	MTFHD1	NM_005956.2	361	tagattcagaataatccattaac	32099	508738		methylenetetrahydr			
4163	MTFHD1	NM_005956.2	1428	gcacattatgtctcgactatttaca	32117	508750	see also 4162 line	ofolate			
4164	MTFHD1	NM_005956.2	1467	gcacagctctcttaactgttt	32119	508757	see also 4162 line	dehydrogenase			
4165	MTFHD1	NM_005956.2	1725	agagccacgtttgatctctctg	32128	508766	see also 4162 line	(NADP+)	-		
4166	MTNR1B	NM_005959.2	315	tccggagacagagaaattgtctc	239004	628077	gpc	receptor_activity			
4167	MTNR1B	NM_005959.2	318	ccgagacacagatatttttttct	239005	628078	see also 4166 line	melatonin receptor	-		
4168	MYLK	NM_005965.2	268	tccacagccgagagagattctc	32498	509147	kinase related				
4169	HNRP2M	NM_005965.2	472	atgtcaatgtgcagcagacttaca	32115	494027	receptor activity				
4170	HNRP2M	NM_005965.2	830	agagctctgagagcagacttgc	32119	494034	see also 4169 line				
4171	HNRP2M	NM_005965.2	830	tgtgacataactcagatcttaca	32120	494038	see also 4169 line				
4172	RNFB	NM_005977.2	583	agacctatatacagattatatt	159749	655091	-				
4173	RNFB	NM_005977.2	1318	atagagctcagagaaatttttaca	159769	655113	see also 4172 line				
4174	RNFB	NM_005977.2	1354	accacaaatagagcccaataga	159771	655115	see also 4172 line				
4175	RNFB	NM_005977.2	1358	aaatattagagcccaatagattac	159772	655116	see also 4172 line				
4176	RNFB	NM_005977.2	1900	cagtgactctcttgcaattttac	159787	655128	see also 4172 line				
4177	RNFB	NM_005977.2	1902	gtgctcttgctcattttttag	159798	655129	see also 4172 line				
4178	RNFB	NM_005977.2	1903	tgtctcttgctcattttttag	159799	655130	see also 4172 line	transcription_regulat			
4179	SIX1	NM_005982.1	834	aggagagacacgcgaacacataa	11278	448434	or	transcription factor	-		
4180	SIX1	NM_005982.1	991	gccacgcgcagactcacaactct	11279	448438	see also 4179 line				
4181	SIX1	NM_005982.1	994	acgcgcagagctcaaacattct	11281	448437	see also 4179 line				
4182	SKP2	NM_005983.2	1435	tgcacaaagcccaatttctataga	219800	607241	cell cycle				
4183	AKR1D1	NM_005983.1	1020	tccatcaatccattttctatga	226338	755774		oxidoreductase			
4184	STK10	NM_005990.1	2495	gaccacatgcacacttacaaga	101387	515468	kinase related	protein kinase CK2			
4185	TSNAX	NM_005998.2	753	atctgagatctatttaactgtct	43100	541775		protein transporter	-		
4186	UCHL3	NM_006002.3	496	caaacactgagccacacaaataga	190707	584223		ubiquitin C-terminal hydrolase	-		
4187	SIAT8B	NM_006011.2	177	atctaatagatgaactgaattgtaa	213009	600658		transferrase, transferring glycosyl groups	-		

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4224	SCM3A3	NM_006080.1	1227	agctctccagctccatctacacac	320010	884438	see also 4222 line	
4225	SCM3A3	NM_006080.1	1567	ggctctccagctccagctccatctacac	320029	884452	see also 4222 line	
4226	SCM3A3	NM_006080.1	1668	agctccagctccagctccagctccatctacac	320030	884453	see also 4222 line	
4227	SCM3A3	NM_006080.1	1669	cgccacagctccagctccagctccatctacac	320031	884454	see also 4222 line	
4228	CEPT1	NM_006090.2	733	aacatctgctccagctccagctccatctacac	209494	748802	-	-
4229	CEPT1	NM_006090.2	813	ggacacctcttggcagctccatctacac	209496	748806	see also 4228 line	
4230	CEPT1	NM_006090.2	814	ggacacctcttggcagctccatctacac	209497	748807	see also 4228 line	
4231	CEPT1	NM_006090.2	885	tagcagggacacatcttctctct	209501	748810	see also 4228 line	
4232	DLCL1	NM_006094.3	334	agccggacacatctctctctacac	130203	534422	-	hepatocellular carcinoma(肝癌)
4233	DLCL1	NM_006094.3	339	ggacacatctctctctacacacac	130204	534423	see also 4232 line	
4234	DLCL1	NM_006094.3	1414	cgacagacagctctctctacac	130224	534449	see also 4232 line	
4235	DLCL1	NM_006094.3	1750	agggagctccagctccagctccatctacac	130228	534457	see also 4232 line	plasma membrane cation-transporting
4236	ATP8A1	NM_006095.1	888	gttgaagcagctccacacatctacac	73618	495221	-	ATPase
4237	ATP8A1	NM_006095.1	1106	ccagcagctccatctctacatctacac	73629	495224	see also 4238 line	
4238	ATP8A1	NM_006095.1	1193	agcagctccagctccagctccatctacac	73634	495228	see also 4238 line	
4239	ATP8A1	NM_006095.1	1988	agcagctccagctccagctccatctacac	73658	495260	see also 4238 line	
4240	ATP8A1	NM_006095.1	1997	agcagctccagctccagctccatctacac	73660	495262	see also 4238 line	
4241	ATP8A1	NM_006095.1	2007	agcagctccagctccagctccatctacac	73661	495263	see also 4238 line	
4242	ATP8A1	NM_006095.1	2243	ccctctctctctctctctacac	73666	495268	see also 4238 line	
4243	ATP8A1	NM_006095.1	2816	agcttctctctctctctctacac	73685	495276	see also 4238 line	protein kinase C binding
4244	GNB2L1	NM_006098.2	439	ctcagacacagcagctccatctctct	125344	529148	kinase, related	
4245	HEC	NM_006101.1	1225	atgagctccagctccagctccatctacac	307598	713263	signal transduction	
4246	SKB1	NM_006108.2	317	agggcagctccagctccagctccatctacac	214904	604813	-	
4247	SKB1	NM_006108.2	1897	ctcgcagctccagctccagctccatctacac	214926	604844	see also 4246 line	cyclophilin-type peptidyl-prolyl cis-trans isomerase
4248	PIIE	NM_006112.1	194	agcagctctcagcagacatctacac	53547	474972	-	small cell lung cancer(肺癌)
4249	VAV3	NM_006113.3	1471	agggcagacacatctctctacatct	172366	569724	signal transduction	
4250	VAV3	NM_006113.3	1713	ctcgcagctccagctccagctccatctacac	172374	569731	see also 4249 line	guanylyl-nucleotide release factor
4251	VAV3	NM_006113.3	1725	gcaatctctcagcagctccatctacac	172376	569732	see also 4249 line	
4252	VAV3	NM_006113.3	2164	atgcaatctcagcagctccatctacac	172390	569746	see also 4249 line	
4253	VAV3	NM_006113.3	2362	cgactctcagcagcagctccatctacac	172399	569751	see also 4249 line	
4254	PECL1	NM_006117.1	167	cagcagacacagctccagctccatctacac	172499	569868	-	dolicoenoyl-CoA delta-isomerase
4255	NCK1	NM_006153.3	215	atctctctctctctctctacatct	316890	607144	-	
4256	NCK1	NM_006153.3	216	tcctctctctctctctctacatct	316891	607145	see also 4255 line	
4257	NCK1	NM_006153.3	221	atgcaatctcagcagctccatctacac	316892	607146	see also 4255 line	
4258	NCK1	NM_006153.3	373	atgcaatctcagcagctccatctacac	316901	607154	see also 4255 line	
4259	NCK1	NM_006153.3	1036	atgcaatctcagcagctccatctacac	316930	607163	see also 4255 line	
4260	NEDD4	NM_006154.1	484	agctccatctcagcagctccatctacac	230226	537658	-	

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4261	NELL2	NM_006150.1	176	cctcaaaatgagctctcaaa	148888	550302	-	structural molecule	-
4262	NELL2	NM_006150.1	187	agccttcaacagctgaagact	148869	550503	see also 4261 line	transcription_regulat	-
4263	NEUROD2	NM_006160.2	1264	gagaaatctcttctcttgaatct	334909	462610	or	transcription_regulat	transcription factor -
4264	NFE2	NM_006163.1	708	ctcagatgattccctcaacttta	7688	462805	or	transcription_regulat	p18(MAPK)/p45 heterodimer
4265	NFE2	NM_006163.1	1003	aactctgcagctgactctttaa	7688	462805	see also 4264 line	transcription_regulat	-
4266	NFE2L2	NM_006164.2	149	gtccagacagacatggtttgga	7730	462737	or	transcription_regulat	translation regulator
4267	NFE2L2	NM_006164.2	1262	tgcctcctggaagtctcaacaga	7755	462766	see also 4266 line	transcription_regulat	-
4268	NFRKB	NM_006185.2	1773	agcaggagctctcaaggtatgac	334941	778586	or	transcription_regulat	-
4269	NFYB	NM_006166.2	206	gagacagcatgaatgatcatga	8120	462862	or	NF-YA/NF-YB/NF-YC	-
4270	NPY5R	NM_006174.2	310	tcttgattggctctatcatctt	176088	571263	gpcr,	receptor activity, signal transduction	-
4271	NSF	NM_006176.1	913	gtcattgagcgaagaactcttaa	95027	510580	-	neuropeptide Y receptor	-
4272	NSF	NM_006176.1	2169	ctgtagaagaatcaagaatttacc	95062	510806	see also 4271 line	serine-type endopeptidase	schizophrenia(精神分裂病)
4273	NSF	NM_006176.1	2174	tggagtcacaaagattctcatg	95063	510807	see also 4271 line	kinase, related,	-
4274	NRK2	NM_006180.2	1380	cacttgatgaattcatttcactgt	95100	510834	receptor activity, signal transduction	neurotrophin TRKB receptor	neuroblastoma(神経芽細胞腫)
4275	NUMA1	NM_006185.1	5986	aggcagacagcgcccaactctgg	292106	694226	or,	transcription_regulat	-
4276	NR4A2	NM_006186.2	566	cggcagcagcagctctctcataag	8626	447293	or,	transcription_regulat	-
4277	OR2L1	NM_006190.3	1589	ctgtatgaaactctctcactaca	20553	670133	or	transcription_regulat	rheumatoid arthritis(関節リウマチ), alcoholism(アルコール依存症), Parkinson disease(パーキンソン病)
4278	OR2L1	NM_006190.3	1604	tactcatctcttactactcaag	20554	670134	see also 4277 line	DNA replication origin binding	-
4279	OR2L1	NM_006190.3	1855	gggcctcacttaactgaattttag	20562	670143	see also 4277 line	transcription_regulat	-
4280	PAX1	NM_006192.1	602	tcttgacatccgcagctttatg	34505	463364	or	translation regulator	-
4281	PBX3	NM_006195.2	432	agctaatgaactctgcgaactatg	8977	447622	or	transcription_regulat	translation regulator
4282	PBX3	NM_006195.2	439	ggagctgcagcactatctctttg	8978	447623	or	transcription_regulat	lymphoblastic leukemia(リンパ性白血病)
4283	PBX3	NM_006195.2	775	tcttgagcattatgatttttaa	8985	447627	see also 4281 line	transcription_regulat	-
4284	PBX3	NM_006195.2	819	ggcgaagagcactactcttcagt	8987	447629	see also 4281 line	transcription_regulat	-
4285	PBX3	NM_006195.2	1240	tactctctcactcttcttaactc	8984	447636	see also 4281 line	transcription_regulat	-
4286	PBX3	NM_006195.2	1241	acctctcgtctgtttactaactc	8985	447637	see also 4281 line	transcription_regulat	-
4287	PBX3	NM_006195.2	1245	tctctgactctgtactcaagcag	8986	447638	see also 4281 line	transcription_regulat	-
4288	POBP1	NM_006196.2	941	ccggtattgcgcgaattgactctc	19643	703420	-	single-stranded DNA binding	-

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4289	PCBP1	NN_006196.2	1008	tactcaaacaccatgaacta	19844	703422	see also 4288 line	transcription regulat	-
4290	PCM1	NN_006197.2	719	ttccctdgcagatctactaa	304082	713989	or	-	-
4291	PCM1	NN_006197.2	721	gcctatgcagatctactaa	304083	713991	see also 4290 line	-	-
4292	PCM1	NN_006197.2	3244	ttgggtctcagagctctctaac	304170	714052	see also 4290 line	-	-
4293	PCM1	NN_006197.2	6020	cccttatgcagatctactaa	304261	714148	see also 4290 line	-	-
4294	PCM1	NN_006197.2	6094	tactcaatctcaatctactaa	304263	714149	see also 4290 line	-	-
4295	PCM1	NN_006197.2	6096	ctgatctcagatctactaa	304264	714150	see also 4290 line	-	-
4296	PCM1	NN_006197.2	6100	atctccagatctactaa	304265	714151	see also 4290 line	-	-
4297	PCTK1	NN_006201.2	1743	ggggagccgcatctcaaacctc	95956	511400	kinase related,	-	-
4298	PCTK1	NN_006201.2	1744	gggagcagatctcaaacctcc	95957	511401	cell cycle	-	-
4299	PDE4D	NN_006203.2	1214	ttcccatctcaatcatgatgag	197891	590193	signal transduction	CAMP-specific	-
4300	PDE4D	NN_006203.2	1393	aacaaagcaatcttaagaagaa	197898	590198	signal transduction	phosphodiesterase	atherosclerosis(粥狀硬化症)
4301	PDE4D	NN_006203.2	1822	ttgagcggagccgagatggagag	197907	590201	see also 4299 line	-	-
4302	PDE6C	NN_006204.2	868	atctggtctgcacataaagattt	197727	590324	signal transduction	cGMP-specific	-
4303	ENPPI	NN_006208.1	1412	tactatctatttaacatgaag	60603	484715	phosphatase	phosphodiesterase	-
4304	ENP2	NN_006209.2	1482	aacagcaacctcccaaacgttg	60695	484774	transcription regulat	or, phosphatase,	-
4305	ENP2	NN_006209.2	1697	agaatcaagtgctctctctga	60700	484778	signal transduction	, gpr	-
4306	PIK3CA	NN_006218.1	323	caatgagcaacctggaagaaag	207268	597220	kinase related,	-	-
4307	PIK3CA	NN_006218.1	327	aggaacacctggaagaaagctcc	207269	597221	signal transduction	-	-
4308	PIK3CA	NN_006218.1	1108	aaccttgatgcaaatgtgaac	207281	597243	see also 4306 line	-	-
4309	PIK3CA	NN_006218.1	1117	gcaatgtgcaacctcaaaagat	207283	597245	see also 4306 line	-	-
4310	PIK3CA	NN_006218.1	1159	tggaaatgagctgaatgataa	207284	597247	see also 4306 line	-	-
4311	PIK3CA	NN_006218.1	1425	atgcttgatgtgaatgttgact	207288	597269	see also 4306 line	-	-
4312	PIK3CA	NN_006218.1	3040	atctccagatcaaatcttttga	207343	597310	see also 4306 line	-	-
4313	PIK3CB	NN_006218.1	143	aggaacacacatctattatt	207349	597323	kinase related,	phosphatidylinositol	-
4314	PIK3CB	NN_006218.1	148	agatcaacctttctatttaag	207350	597324	signal transduction	3-kinase, class	-
4315	PIK3CB	NN_006218.1	778	ggatcaacctcaatcttgatct	207372	597346	see also 4313 line	-	-
4316	PIK3CB	NN_006218.1	3153	agatcaacctcaatcttgatct	207444	597415	see also 4313 line	-	-
4317	PITPN	NN_006224.2	268	ggctcttgatgagatctcaagt	173824	570292	-	phosphatidylinositol	-
4318	PITPN	NN_006224.2	704	aagaccacacaaatttaattct	173835	570299	see also 4317 line	transporter	-
4319	PNOC	NN_006228.2	647	caagaacagcttgatgtattt	169849	597391	signal transduction	opioid peptide	-

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4320	POLE	NM_006231.1	1271	atggttgaagagacattacc	35822	464061	-	zeta DNA polymerase	-
4321	POLE	NM_006231.1	1297	ctctggccatcatctctcaag	35823	464062	see also 4320 line	-	-
4322	POLE	NM_006231.1	3161	ctctggccatcatctctcaag	35824	464109	see also 4320 line	-	-
4323	POLE	NM_006231.1	4488	caagagatcatctctctctacc	35854	464135	see also 4320 line	-	-
4324	POLE	NM_006231.1	4487	agcctgatactctctctctacc	35855	464136	see also 4320 line	-	-
4325	PPEF2	NM_006235.2	1882	ggctccactctctctgaattg	151465	552635	phosphatase	-	-
4326	PPP2R5B	NM_006244.2	837	tggagtgatgttgcctctctg	298774	666329	phosphatase, signal transduction	protein phosphatase type	-
4327	PPP2R5D	NM_006245.2	864	accattttctctgcctctctg	298811	666389	phosphatase, signal transduction	-	-
4328	PPP2R5D	NM_006245.2	874	atcgctcatctgcaagttttg	298812	666390	see also 4327 line	-	-
4329	PPP2R5E	NM_006246.2	622	tgtataaattgagcagttttct	298822	666404	phosphatase, signal transduction	protein phosphatase type	-
4330	PPP2R5E	NM_006246.2	641	tctctggaagtcctctggaag	298823	666405	see also 4329 line	-	-
4331	PPP2R5E	NM_006246.2	816	tctctggaagtcctctggaag	298832	666407	see also 4329 line	-	-
4332	PPP2R5E	NM_006246.2	819	atggacacgctctctctctctaa	298833	666408	see also 4329 line	-	-
4333	PPP2R5E	NM_006246.2	820	tggacacgctctctctctctaa	298834	666408	see also 4329 line	-	-
4334	PPP2R5E	NM_006246.2	855	aagcctctcaactcttaantaaat	298836	666410	see also 4329 line	-	-
4335	PPP2R5E	NM_006246.2	857	gcctctctcaactcttaantaaat	298837	666411	see also 4329 line	-	-
4336	PPP2R5E	NM_006246.2	876	ctctctgacacatcaactaaag	298838	666412	see also 4329 line	-	-
4337	PRKCH	NM_006255.2	1024	acgtctgcacatctcaattgta	97165	512182	see also 4337 line	protein kinase C	-
4338	PRKCH	NM_006255.2	1025	acgtctgcacatctcaattgta	97166	512183	see also 4337 line	-	-
4339	PRKCH	NM_006255.2	1028	tgccctctcaactctcaattgta	97167	512184	see also 4337 line	-	-
4340	PRKCH	NM_006255.2	1198	ggacacagagctctctctctctaa	97170	512186	see also 4337 line	-	-
4341	PRKCL2	NM_006256.1	656	aactctgctgagagacatbaag	97289	499558	kinase, related, signal transduction	protein serine/threonine kinase	-
4342	PRKCL2	NM_006256.1	1287	caagtcacagctgaactgcaattt	97320	499578	see also 4341 line	-	-
4343	PRKCO	NM_006257.1	359	ggcgaatctgaatgaagcaaga	97505	512385	kinase, related, signal transduction	protein tyrosine kinase	-
4344	PRKGI	NM_006258.1	640	gaacgctcgaactctctgaattg	97576	512442	kinase, related, signal transduction	protein tyrosine kinase	-
4345	PRKGI	NM_006258.1	678	tgtctgtgcaactgttttcaaca	97581	512447	see also 4344 line	-	-
4346	PRKGI	NM_006258.1	1814	tgtggagagatggcatgtaga	97612	512473	see also 4344 line	-	-
4347	PRKGI	NM_006258.1	1816	ggagggagatggcatgtaga	97613	512474	see also 4344 line	-	-
4348	PRKG2	NM_006259.1	1564	actctactctcaagacatbaag	97648	512521	kinase, related, signal transduction	protein kinase CK2	-
4349	PRKG2	NM_006259.1	1565	tctctactctcaagacatbaag	97649	512522	see also 4348 line	-	-
4350	PRKG2	NM_006259.1	2134	aacacaggtgtgaatgaatttt	97663	512538	see also 4348 line	-	-
4351	PTPN13	NM_006264.1	1262	caattctgaagacatacaacttat	193249	586652	phosphatase	-	-
4352	PTPN13	NM_006264.1	2711	tgtgagactctctcttgagpcc	193294	586656	see also 4351 line	-	-
4353	PTPN13	NM_006264.1	2749	ggactgtgagagacttaattat	193296	586667	see also 4351 line	-	-

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4354	PTPN13	NM_006264.1	2751	ctccttgaagcattatattag	182957	596588	see also 4351 line	
4355	PTPN13	NM_006264.1	5577	atccaaacacatcagattagctc	193571	596765	see also 4351 line	
4356	RAO21	NM_006265.1	409	tgccgctgcagcagcattc	134898	552745	apoptosis,	guanyl-nucleotide release factor
4357	RALGDS	NM_006266.1	492	ttcaaaagcgcgcagatagtag	298460	570330	signal transduction	
4358	RALGDS	NM_006266.1	517	cctctcagcgcctctctcagtag	298461	570331	see also 4357 line	
4359	RANBP2	NM_006267.3	9870	ttgacctttgaagctctgattatt	127752	619535	peptidyl-prolyl cis-trans isomerase	
4360	RANBP2	NM_006267.3	9671	tgaccttgaagctctgattatt	127753	619536	see also 4359 line	
4361	RANBP2	NM_006267.3	9683	atgattattgattgatttttaag	127754	619538	see also 4359 line	
4362	DPF2	NM_006268.3	149	ccgagtagtccagcagcaattgt	25574	458649	apoptosis,	
4363	ITSN2	NM_006277.1	863	caactctgattgattgattgattc	148926	553822	transcription, regulat or	DNA binding
4364	ITSN2	NM_006277.1	869	ctgattgattgattgattgattg	148927	553823	see also 4363 line	
4365	ITSN2	NM_006277.1	1331	gacaaacgcgaagcgaactatga	148934	553834	see also 4363 line	
4366	ITSN2	NM_006277.1	2004	aagaattatgcgaagcgaactaa	148948	553850	see also 4363 line	
4367	ITSN2	NM_006277.1	2820	tggttgcttttattgatttttc	148965	553860	see also 4363 line	
4368	SIAT4C	NM_006278.1	215	tcgtctatgctgtattcattc	212786	601133	transferrase, transferring	
4369	SIAT4C	NM_006278.1	577	gtgtctatcagatttattcattc	212792	601144	glycosyl groups	
4370	SIAT6	NM_006279.2	558	tggtctatcaaatctcaaacctc	212847	601066	see also 4368 line	
4371	SIAT6	NM_006279.2	567	atgtctatcaaacattctgataag	212848	601067	see also 4370 line	
4372	SIAT6	NM_006279.2	1167	cgacccctgcactctatctatga	212956	601096	see also 4370 line	
4373	STK3	NM_006281.1	754	tcctctgtgctattcttctataga	101666	515671	kinase, related,	
4374	STK4	NM_006282.2	603	aggctaaactacagataccattg	101833	515795	apoptosis,	protein kinase CK2
4375	TACG1	NM_006283.1	479	cagctcgtgattcttaaggattt	322156	792666	kinase, related,	protein tyrosine kinase
4376	TFDP2	NM_006286.1	635	gaagcttgatttaaacagataaagc	13235	441498	signal transduction	
4377	TFDP2	NM_006286.1	1032	tggttaactcaagcagctactctt	13240	441503	transcription, regulat or, cell cycle	translation regulator
4378	THY1	NM_006288.2	162	ctgactctgcctccttgaaataac	284743	654836	see also 4376 line	
4379	TLN1	NM_006289.2	3224	gttgaactcttgaagattgattct	119519	524650	kinase, related,	structural constituent of cytoskeleton
4380	TLN1	NM_006289.2	3300	agctcagaatgcgaacttaaac	119521	524653	apoptosis,	
4381	TLN1	NM_006289.2	4647	ttctccacagcagcattctgac	119537	524686	see also 4379 line	
4382	TLN1	NM_006289.2	4650	tcccaatgcgccttttgacct	119538	524687	see also 4379 line	
4383	TLN1	NM_006289.2	5749	accacagctacccttgacctg	119547	524685	see also 4379 line	

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4384	TINAIIP3	NM_006290.2	609	ggccgaagatggctctgaatga	42382	apoptosis,	Transcription	-
4385	TINAIIP3	NM_006290.2	612	ccgaatggatcgaatgaact	42383	489217 or see also 4384 line	factor p65	-
4386	TSG101	NM_006292.2	389	tgttgaagctctagttaaatg	43033	541751 or see also 4386 line	transcription co- repressor	breast cancer(乳腺癌)
4387	TSG101	NM_006292.2	394	aagctactactctgaatgaact	43034	541752	see also 4386 line	-
4388	TSG101	NM_006292.2	395	agctactactctgaatgaact	43035	541753	see also 4386 line	-
4389	TSG101	NM_006292.2	396	gcctactactctgaatgaact	43036	541754	see also 4386 line	-
4390	VARS2	NM_006295.1	209	ccgcatacagccaataagctat	107306	517520	valine-tRNA ligase	-
4391	VIRK2	NM_006296.2	802	ggcctaattggcaataagatt	107505	517616	kinase related	-
4392	MAP3K12	NM_006301.2	1148	accacgaatgcgccatcctcc	89078	507024	protein tyrosine kinase	-
4393	MAP3K12	NM_006301.2	1247	agccagatgcgcgaagaagtaa	89079	507028	see also 4392 line	-
4394	MAP3K12	NM_006301.2	1253	gtacgcgaagaagaataaacctg	89080	507030	see also 4392 line	-
4395	JTV1	NM_006303.2	769	ctctgtttgccaaagcctaact	16318	760888	-	-
4396	SHEM1	NM_006304.1	204	aactctgtctgctctgaatgaaga	284196	667892	molecular function unknown	split-hand and split-foot(裂手・裂足)
4397	SMC1L1	NM_006306.2	109	tgtctcaaggtcgcgaagattat	100453	514698	cell cycle,	-
4398	SMC1L1	NM_006306.2	171	tgtctctgtgaatgcgaattctta	100454	514700	signal transduction	-
4399	SMC1L1	NM_006306.2	1727	gcagagagctatcgtatctatc	100468	514735	see also 4397 line	-
4400	SMC1L1	NM_006306.2	2301	tgtgctctgctatgaatgaataa	100476	514752	see also 4397 line	-
4401	SMC1L1	NM_006306.2	2303	ggctctgctctgaatgaatcaag	100477	514753	see also 4397 line	-
4402	SMC1L1	NM_006306.2	2990	caagagagcgcctcttgaatt	100489	514768	see also 4397 line	-
4403	SMC1L1	NM_006306.2	3569	tgtgcagagtcgaataatcctt	100500	514779	see also 4397 line	-
4404	NPEPPS	NM_006310.2	1018	gagaaatggagcctcttactta	158624	559312	zinc binding	-
4405	NPEPPS	NM_006310.2	1021	aactctggagctcttctctatag	158625	559313	-	-
4406	NPEPPS	NM_006310.2	1959	ctctgtgaagctcttcaaatgta	158644	559340	see also 4404 line	-
4407	NPEPPS	NM_006310.2	1991	tgtctgaagcccaattact	158646	559341	see also 4404 line	-
4408	NPEPPS	NM_006310.2	1993	gtgaagagcccaattactact	158647	559342	see also 4404 line	-
4409	NPEPPS	NM_006310.2	2235	arecctctgtgtgaagaagcc	158649	559346	see also 4404 line	-
4410	NCOR1	NM_006311.2	1246	agcaaaacaaggaactactatga	33565	482407 or	transcription, regulat	-
4411	NCOR1	NM_006311.2	1440	ctctatgtatcaactactatgt	33567	482413	transcription co- repressor	-
4412	NCOR1	NM_006311.2	5205	ggcaatctgcctccaactaatt	33562	482408	see also 4410 line	-
4413	NCOR1	NM_006311.2	5666	tgcacatcctcctttcaactact	33562	482502	see also 4410 line	-
4414	NCOR1	NM_006311.2	6043	gttatctacacaggaatgac	33567	482510	see also 4410 line	-
4415	NCOR1	NM_006311.2	6804	aagctatctgcctctactttaa	33579	482519	see also 4410 line	-
4416	USP15	NM_006313.1	56	tccgcgcctctctcaaacctcg	188921	582942	ubiquitin-specific	-
4417	USP15	NM_006313.1	967	agcaaacgcgcctcaactgacac	188938	582958	protease	-
4418	USP15	NM_006313.1	980	gcaaatctctgaatgaatgaag	188952	582973	see also 4416 line	-
4419	USP15	NM_006313.1	989	gtgtctctgaagaattgactacg	188958	582977	see also 4416 line	-

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4420	RNF3	NM_006351.3	484	cagagctgctctggaagatgcc	335197	777911	-	-	-
4421	CDP1	NM_006351.2	374	tccgtatcccgatgactcttc	161802	606496	-	-	-
4422	CDP1	NM_006351.2	315	cggttatcccgatgactcttc	161803	606497	see also 4421 line	-	-
4423	TUBGP3	NM_006322.3	1074	gaagctggaagctgctgctgac	306966	675978	-	-	-
4424	TUBGP3	NM_006322.3	1506	gaagctggaagctgctgctgac	306967	675979	see also 4423 line	-	-
4425	TUBGP3	NM_006322.3	1507	gaagctggaagctgctgctgac	306968	675980	see also 4423 line	-	-
4426	TUBGP3	NM_006322.3	1509	gaagctggaagctgctgctgac	306969	675981	see also 4423 line	-	-
4427	TUBGP3	NM_006322.3	1511	gaagctggaagctgctgctgac	306970	675982	see also 4423 line	-	-
4428	TUBGP3	NM_006322.3	1662	tctctgcaacgaattttttttg	306971	675983	see also 4423 line	-	-
4429	TUBGP3	NM_006322.3	1662	tctctgcaacgaattttttttg	306972	676001	see also 4423 line	-	-
4430	RBM14	NM_006323.1	2177	gtgctacagctgcgaatgctga	306976	676029	see also 4423 line	-	-
4431	RBM14	NM_006323.1	170	gtgctacagctgcgaatgctga	65329	485704	-	-	-
4432	RBM14	NM_006323.1	170	gtgctacagctgcgaatgctga	65330	485705	see also 4430 line	-	-
4433	FBLN5	NM_006323.2	968	gtgctacagctgcgaatgctga	65339	485705	see also 4430 line	-	-
4434	FBLN5	NM_006323.2	968	gtgctacagctgcgaatgctga	144202	548380	integrin binding	-	-
4435	FBLN5	NM_006323.2	1768	gtgctacagctgcgaatgctga	144221	548397	see also 4433 line	-	-
4436	BALP2	NM_006340.1	118	gtgctacagctgcgaatgctga	144222	548398	see also 4433 line	-	-
4437	MERTK	NM_006343.1	1183	gtgctacagctgcgaatgctga	120836	532492	signal transduction	-	-
4438	MERTK	NM_006343.1	2496	gtgctacagctgcgaatgctga	90847	508215	receptor activity, kinase related, signal transduction	-	-
4439	SLC30A9	NM_006345.2	902	gtgctacagctgcgaatgctga	90847	508215	transmembrane receptor protein tyrosine kinase	-	-
4440	SLC30A9	NM_006345.2	921	gtgctacagctgcgaatgctga	90848	508216	see also 4437 line	-	-
4441	SLC30A9	NM_006345.2	923	gtgctacagctgcgaatgctga	90849	508217	see also 4437 line	-	-
4442	SLC30A9	NM_006345.2	927	gtgctacagctgcgaatgctga	90850	508218	see also 4437 line	-	-
4443	PBF1	NM_006346.1	1713	gtgctacagctgcgaatgctga	90851	508219	see also 4437 line	-	-
4444	TMM44	NM_006351.2	1017	gtgctacagctgcgaatgctga	90852	508220	see also 4437 line	-	-
4445	ZNF238	NM_006352.2	1367	gtgctacagctgcgaatgctga	90853	508221	see also 4437 line	-	-
4446	ZNF238	NM_006352.2	1369	gtgctacagctgcgaatgctga	90854	508222	see also 4437 line	-	-
4447	ZNF238	NM_006352.2	1377	gtgctacagctgcgaatgctga	90855	508223	see also 4437 line	-	-
4448	ZNF238	NM_006352.2	1378	gtgctacagctgcgaatgctga	90856	508224	see also 4437 line	-	-
4449	SLC9A6	NM_006358.1	927	gtgctacagctgcgaatgctga	90857	508225	see also 4437 line	-	-
4450	SLC9A6	NM_006358.1	939	gtgctacagctgcgaatgctga	90858	508226	see also 4437 line	-	-
4451	NXF1	NM_006362.3	677	gtgctacagctgcgaatgctga	90859	508227	see also 4437 line	-	-
4452	NXF1	NM_006362.3	1139	gtgctacagctgcgaatgctga	90860	508228	see also 4437 line	-	-
4453	NXF1	NM_006362.3	1140	gtgctacagctgcgaatgctga	90861	508229	see also 4437 line	-	-
4454	NXF1	NM_006362.3	1149	gtgctacagctgcgaatgctga	90862	508230	see also 4437 line	-	-
4455	NXF1	NM_006362.3	1691	gtgctacagctgcgaatgctga	90863	508231	see also 4437 line	-	-
4456	NXF1	NM_006362.3	1692	gtgctacagctgcgaatgctga	90864	508232	see also 4437 line	-	-

4457	INX1	NM_006392.3	1700	aggctatctatcttataatgag	53024	474561	see also 4451 line	
4458	SEC23B	NM_006393.3	870	tccgagagaccagatttaaac	270052	652343	-	-
4459	SEC23B	NM_006393.3	871	tccgagagaccagatttaaac	270053	652344	see also 4458 line	
4460	SEC23B	NM_006393.3	1339	acctctggagaccgaagtttaac	270071	652361	see also 4458 line	
4461	SEC23A	NM_006394.2	412	gaacactctgcgcgaattttaa	269988	652292	-	protein transporter
4462	SEC23A	NM_006394.2	415	caactctgcgaatttgaatc	269989	652293	see also 4461 line	
4463	SYNCRIP	NM_006372.3	672	aggctatgctcaatgaattgatt	55053	471466	-	-
4464	SYNCRIP	NM_006372.3	711	caagctatctctctatcttcaaa	55057	471473	see also 4463 line	
4465	COV1	NM_006375.2	972	ggatgaacacggatgctcgc	58753	482039	-	-
4466	COV1	NM_006375.2	1059	ggtctcacattatcagatcaga	58757	482040	see also 4465 line	
4467	COV1	NM_006375.2	1366	aggctatggaccactcccaaaa	58763	482047	see also 4465 line	
4468	COV1	NM_006375.2	1367	ggcatgggaccactccaaaag	58764	482048	see also 4465 line	
4469	UNC13B	NM_006377.2	1000	agtgatgctctctctctgaagt	252372	673208	receptor, activity	-
4470	UNC13B	NM_006377.2	4170	ggcagacaccacgcatctctaa	252418	673253	apoptosis	-
4471	UNC13B	NM_006377.2	4887	ggccgaagatccatataatgaa	252426	673261	see also 4469 line	
4472	SEMA3C	NM_006378.2	1774	tectctcatctcactctcaact	310770	684331	-	-
4473	APPB2	NM_006380.2	342	ctctctctctctgccaactctaa	299541	719356	-	psoriasis arthritis (関節炎/ウマチ)
4474	APPB2	NM_006380.2	344	ccactctctctgccaactctaa	299542	719357	-	Peutz-Jeghers syndrome (ポイツ・ジェガース症候)
4475	APPB2	NM_006380.2	1200	ctcgagctctgccaactctaa	299566	719385	see also 4473 line	
4476	HTATIP	NM_006398.2	924	tactatcccgatgagagcaatt	18572	450735	transcription, regulator	transcription co-activator
4477	HTATIP	NM_006398.2	972	gctctatgctctgctctctctcc	18573	450737	or	-
4478	JPOT	NM_006391.1	891	saagggcctctactatctttgc	127431	530061	see also 4478 line	-
4479	JPOT	NM_006391.1	997	ctgtgtgtctcccaagtttta	127435	530065	signal transduction	-
4480	JPOT	NM_006391.1	1003	gtgtccgaagaattttatgaag	127437	530066	see also 4478 line	-
4481	JPOT	NM_006391.1	1136	ggccctatacaaggagcatatcc	127439	530069	see also 4478 line	-
4482	JPOT	NM_006391.1	1225	acgaatatacagatgaatttt	127444	530070	see also 4478 line	-
4483	JPOT	NM_006391.1	1925	tactgtatgagatctgaatttt	127462	530091	see also 4478 line	-
4484	JPOT	NM_006391.1	3047	gactatcgtgcttaatgaagac	127495	530113	see also 4478 line	-
4485	NOL5A	NM_006392.2	854	ctccactgtgtgtgtctttat	52878	676261	RNA binding	-
4486	NEDD9	NM_006403.2	2458	ggccagcagcatcccaacaagt	307478	673793	signal transduction	-
4487	TW95F1	NM_006405.3	718	tccattgtgttccatctcaac	275224	657675	cell cycle	-
4488	TW95F1	NM_006405.3	977	tgcagctgattttatctcaag	275229	657684	transporter	-
4489	TW95F1	NM_006405.3	1384	ccagcagctctcaactgaattct	275233	657684	see also 4487 line	-
4490	TW95F1	NM_006405.3	1453	ctgttgagctcttcaactcttt	275234	657686	see also 4487 line	-
4491	TW95F1	NM_006405.3	1455	gtgtctctctctcaactcttt	275235	657686	see also 4487 line	-
4492	TW95F1	NM_006405.3	1508	tgtctgagcatctctctttgt	275238	657697	see also 4487 line	-
4493	PRDX4	NM_006406.1	360	atctgggaactctgttttttc	223674	610790	thioredoxin peroxidase	-
4494	PRDX4	NM_006406.1	792	accactgtgtgtgaacatctatc	223685	610807	see also 4493 line	-
4495	ARPC1A	NM_006409.2	1160	agaattgttgcgaattttgcaat	115320	668926	actin binding	-

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		427	474	transcription regulat	small cell lung cancer(肺癌)
4498	HTATP2	NM_0064103	427	111912	706792
4497	HTATP2	NM_0064103	474	111914	706793
4498	OPAP3	NM_0064222	2577	253194	531848
4499	DPVSL4	NM_0064261	1008	224799	595638
4500	CGT4	NM_0064302	982	75475	497583
4501	CGT4	NM_0064302	1349	75495	497580
4502	CGT4	NM_0064302	1421	75502	497582
4503	CGT4	NM_0064302	1955	75512	497587
4504	CGT4	NM_0064302	3999	75517	497587
4505	SMC2L1	NM_0064441	3524	100718	514873
4506	SMC2L1	NM_0064441	3559	100725	514879
4507	PRPF8	NM_0064452	1805	46569	752067
4508	PRPF8	NM_0064452	3309	46627	752110
4509	PRPF8	NM_0064452	4134	46642	752129
4510	PRPF8	NM_0064452	4160	46644	752130
4511	PRPF8	NM_0064452	5198	46669	752153
4512	PRPF8	NM_0064452	6000	46687	752173
4513	PRPF8	NM_0064452	6001	46688	752174
4514	PRPF8	NM_0064452	6364	46695	752189
4515	USP16	NM_0064471	267	189039	593040
4516	USP16	NM_0064471	274	189040	593041
4517	USP16	NM_0064471	278	189041	593042
4518	USP16	NM_0064471	709	189055	593059
4519	USP16	NM_0064471	781	189057	593058
4520	USP16	NM_0064471	783	189059	593059
4521	USP16	NM_0064471	2306	189102	593101
4522	USP16	NM_0064471	2371	189105	593105
4523	CDCA2EP3	NM_0064493	1288	120849	533422
4524	TBL3	NM_0064552	407	253787	756016
4525	SC65	NM_0064552	2	308076	756045
4526	SC65	NM_0064552	817	308077	756046
4527	SC65	NM_0064552	811	308079	756047
4528	SC65	NM_0064552	818	308080	756048
4529	LIM	NM_0064552	1785	125284	530688
4530	TRIM3	NM_0064552	183	335557	756704
4531	KEO4	NM_0064552	276	335562	756710
4532	KEO4	NM_0064552	285	335563	756711
4533	KEO4	NM_0064552	311	335565	756714
4534	KEO4	NM_0064552	522	335570	756723
4535	KEO4	NM_0064552	522	335570	756723

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4536	TGOLN2	NM_006464.1	1340	atccatctactacacattgag	323507	667860	transcription_regulat	-	-
4537	IVNS1ABP	NM_006466.2	561	tcccatcagatgattgattg	132011	536024	or	-	-
4538	IVNS1ABP	NM_006466.2	954	ctctctcttaccgaatttgg	132022	536047	see also 4537 line	-	-
4539	IVNS1ABP	NM_006466.2	958	atctcttaccgaatttgg	132023	536049	see also 4537 line	-	-
4540	IVNS1ABP	NM_006466.2	966	tggagctaccctcttggat	132024	536052	see also 4537 line	-	-
4541	IVNS1ABP	NM_006466.2	987	tggagctaccctcttggat	132025	536053	see also 4537 line	-	-
4542	IVNS1ABP	NM_006466.2	989	tgagctccctcttggatgaa	132026	536054	see also 4537 line	-	-
4543	IVNS1ABP	NM_006466.2	1087	tggagctcttggatgaa	132031	536057	see also 4537 line	-	-
4544	IVNS1ABP	NM_006466.2	1646	catgagtgatctggaactata	132038	536067	see also 4537 line	-	-
4545	OSP-2	NM_006475.1	856	tctccagtggtctctgagaaga	292196	663120	-	-	-
4546	GAS2L1	NM_006478.3	859	ctccagcttccatctgacag	306278	674185	cell cycle	-	-
4547	ERF	NM_006494.1	1073	caccacaagctctacactacc	3387	434466	transcription_regulat	transcription co-	-
4548	POLH	NM_006502.1	305	acgcgaactctctactgagc	17057	593445	or, cell cycle	repressor	-
4549	POLH	NM_006502.1	442	aagaaatttctcagactctct	17060	593462	see also 4548 line	-	xeroderma pigmentosum(色素性乾皮症)
4550	RASA2	NM_006508.2	538	tgcctatggtctctctctctaaa	297142	665773	-	RAS GTPase	-
4551	RASA2	NM_006508.2	868	tctctacccaagagccacatg	297156	665784	see also 4550 line	activator	-
4552	RELB	NM_006508.2	1778	gcctcttgagcagacactgctc	10450	448116	transcription_regulat	translation	-
4553	SARS	NM_006513.2	94	tctcttcttgcctgatactgagc	54573	514388	or	regulator	-
4554	SARS	NM_006513.2	218	tctggcagcagactctgacacag	54578	514400	see also 4553 line	serine-RNA ligase	-
4555	SARS	NM_006513.2	219	tctggcagcagactctgacacag	54579	514401	see also 4553 line	-	-
4556	SCN10A	NM_006514.1	984	tctgacacacccagcttttaact	152470	553538	channel	-	-
4557	SCN10A	NM_006514.1	986	ctgcacacacccagcttttaact	152471	553540	see also 4556 line	-	-
4558	SETMAR	NM_006515.1	683	tctctctcagcttactcactg	335720	801375	-	-	-
4559	SETMAR	NM_006515.1	687	tctcgaattgctcactgctacc	335721	801376	see also 4558 line	-	-
4560	TFE3	NM_006521.3	1305	gtcgacggcgttaccattctaac	13259	468944	transcription_regulat	translation	renal cell carcinoma(腎細胞癌), alveolar soft part sarcoma(筋状軟部肉腫), renal tumour(腎腫瘍), synovial sarcoma(滑膜肉腫), soft tissue sarcoma(軟部組織肉腫)
4561	TFE3	NM_006521.3	1306	tgcgaagcgttaccattctaac	13260	468945	or	regulator	-
4562	TFE3	NM_006521.3	1309	caggcgttaccattctaacgaa	13261	468946	see also 4560 line	-	-
4563	GLRA3	NM_006529.1	1510	gagaaatttacccttctcaga	179335	572608	channel	GABA-A receptor	-
4564	GAS41	NM_006530.2	827	arccatcgttgaacactbaatt	4383	725927	receptor activity	transcription_regulat	glioma(グリオーマ), CNS Tumours(中枢神経腫瘍)
4565	TG137	NM_006531.2	394	ctgaaatgttgcacagactct	314640	664824	or	-	-
4566	TG137	NM_006531.2	1678	tgcgaatgttgcacagactgag	314665	664832	see also 4565 line	-	-
4567	NCOA3	NM_006534.2	855	tgcctccagctgattgacacattg	112150	602551	or,	transcription_regulat	breast cancer(乳癌), liposarcoma(脂肪肉腫)
4568	NCOA3	NM_006534.2	1032	aggtctgcactgattgacacat	112158	602555	see also 4567 line	-	-
4569	CLOA2	NM_006536.3	1468	gaggaattcttcaccttaccag	263088	646668	channel	-	-

4570	USP3	NM_006537.1	256	ggccatgcacaaacacattatga	189441	593511	-	ubiquitin-specific protease	-
4571	USP3	NM_006537.1	785	aagcagccagactcattttatgc	189451	593527	see also 4570 line	-	-
4572	CAONCG3	NM_006539.2	1217	gaagatccagatgatgatccac	261570	645235	channel	-	-
4573	CAONCG3	NM_006539.2	1310	gaagatccagatgatgatccac	261576	645241	see also 4572 line	-	-
4574	CAONCG3	NM_006539.2	1313	gaagatccagatgatgatccac	261577	645242	see also 4572 line	-	-
4575	CAONCG3	NM_006539.2	1315	gaagatccagatgatgatccac	261578	645243	see also 4572 line	-	-
4576	CAONCG3	NM_006539.2	1318	gaagatccagatgatgatccac	261579	645244	see also 4572 line	-	-
4577	CAONCG3	NM_006539.2	1417	tcgcagatgaatctctcagatga	261582	645245	see also 4572 line	-	-
4578	CAONCG3	NM_006539.2	1418	tcgcagatgaatctctcagatga	261583	645246	see also 4572 line	-	-
4579	CAONCG3	NM_006539.2	1422	agggatggtctcgaagaatctgc	261584	645248	see also 4572 line	-	-
4580	CAONCG3	NM_006539.2	1423	agggatggtctcgaagaatctgc	261585	645249	see also 4572 line	-	-
4581	NCOA2	NM_006540.1	1530	caactctcaggtgtgtatcatatg	112071	525635	transcription regulator	-	-
4582	NCOA2	NM_006540.1	1542	tagtaactctcaggtgtgtatcatatg	112072	525636	see also 4581 line	-	-
4583	NCOA2	NM_006540.1	2480	gagatctgcacatcaacaaata	112065	525658	see also 4581 line	-	-
4584	NCOA2	NM_006540.1	2665	gcaaaacacacatcatcatatga	112087	525662	see also 4581 line	-	-
4585	NCOA2	NM_006540.1	2867	tcacacatcatcatcatcatatga	112091	525663	see also 4581 line	-	-
4586	NCOA2	NM_006540.1	3609	tcacatccagatgcacaaatcttc	112109	525670	see also 4581 line	-	-
4587	TXNL2	NM_006541.1	784	atcttgatctacacacaaatc	265935	649560	-	-	-
4588	IMP-3	NM_006541.2	426	atcgatgctcttcagctcaaat	52710	434719	-	-	-
4589	IMP-3	NM_006541.2	938	cagacacacacacacacacacac	32229	484737	see also 4588 line	-	-
4590	IMP-2	NM_006548.3	238	ctcgggaagacagatgatgatg	335749	808102	-	-	-
4591	IMP-2	NM_006548.3	238	ctcgggaagacagatgatgatg	335757	808108	see also 4590 line	-	-
4592	MTX2	NM_006548.3	624	gccaatgacacattgtgttaa	269494	651915	-	-	-
4593	MTX2	NM_006548.3	624	gccaatgacacattgtgttaa	269495	651916	see also 4592 line	-	-
4594	MTX2	NM_006548.3	668	gccaatgacacattgtgttaa	269498	651926	see also 4592 line	-	-
4595	KHDRBS3	NM_006558.1	1413	accagacatctgcagatcatcga	50307	471169	-	-	-
4596	CUGBP1	NM_006560.2	185	tcctgttgacacattggaagat	50314	471181	see also 4596 line	-	-
4597	CUGBP1	NM_006560.2	342	ggagacacacattctctatcac	50330	471193	see also 4596 line	-	-
4598	CUGBP1	NM_006560.2	1340	tgccaaagatcttcacacacac	50333	471199	see also 4596 line	-	-
4599	CUGBP2	NM_006561.1	267	aaagttgtttctcactatcttc	50340	471212	-	-	-
4600	CUGBP2	NM_006561.1	303	arccaaacattctctatctcac	50356	471230	see also 4600 line	-	-
4601	CUGBP2	NM_006561.1	1389	ctgcataattctctatctcac	50356	471233	see also 4600 line	-	-
4602	CUGBP2	NM_006561.1	1824	atctaacatctctatctcac	50356	471233	see also 4600 line	-	-
4603	CTCF	NM_006565.1	1624	atctaacatctctatctcac	2611	457516	transcription co-repressor	-	-
4604	CTCF	NM_006565.1	1658	tcacaaacacattctctatcttc	2612	457518	see also 4603 line	-	-
4605	CTCF	NM_006565.1	2324	caggcgaatggaatgacatctata	2619	457530	see also 4603 line	-	-
4606	GNA13	NM_006572.3	321	cagacacgctcgaacagatcaga	109070	519407	signal transduction protein	-	-
4607	GNA13	NM_006572.3	702	tcctctcaaatctgagatgag	109085	519416	see also 4606 line	-	-
4608	MAP4K5	NM_006575.3	1266	atcatctgctacatcatcatgac	89787	715296	kinase related	-	-

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4609	RGNT1	1266	agccttcagcagcttcattatag	209808	599279	-	-	-	-
4610	FUT9	557	atcccttcagcagcttcattcaaca	210854	599701	-	-	-	-
4611	FUT9	791	cgccttcagcagcttcattcaacag	210864	599712	see also 4610 line	-	-	-
4612	FUT9	792	cgccttcagcagcttcattcaacagt	210865	599713	see also 4610 line	-	-	-
4613	RRH	803	gccttcagcagcttcattcaacag	241214	629141	gpor,	rhodopsin-like	-	-
4614	GRN	630	tgcttcagcagcttcattcaacata	181759	575626	receptor activity,	receptor	-	-
4615	GRN	631	gccttcagcagcttcattcaacat	181760	575627	receptor activity	trypsin	-	-
4616	GRN	2472	cccttcagcagcttcattcaacaaa	181803	575664	see also 4614 line	-	-	-
4617	POLD3	1159	tactacagcagcttcattcaacc	35771	598322	-	-	-	-
4618	TBR1	477	atgccttcagcagcttcattcaaca	126832	449041	transcription regulat	transcription factor	-	-
4619	TBR1	484	atagcagcagcagcagcatttt	12684	449042	or	-	-	-
4620	TBR1	572	ctcttcagcagcagcagcatttt	12687	449044	see also 4618 line	-	-	-
4621	TBR1	576	gccttcagcagcagcagcatttt	12688	449045	see also 4618 line	-	-	-
4622	TBR1	1416	taccagcagcagcagcagcatttt	12697	449059	see also 4618 line	-	-	-
4623	TBR1	2177	ctcttcagcagcagcagcagcatttt	12699	449066	see also 4618 line	-	-	-
4624	TBR1	2180	cagcagcagcagcagcagcagcatttt	12700	449067	see also 4618 line	-	-	-
4625	AP4B1	280	ctcttcagcagcagcagcagcatttt	273167	708464	see also 4618 line	-	-	-
4626	AP4B1	705	cagcagcagcagcagcagcagcatttt	273183	708465	see also 4625 line	-	-	-
4627	POLQ	1992	cagcagcagcagcagcagcagcatttt	17182	464345	-	-	-	-
4628	POLQ	2542	atgccttcagcagcagcagcagcatttt	17181	464354	see also 4627 line	-	-	-
4629	POLQ	2543	tgcttcagcagcagcagcagcatttt	17182	464365	see also 4627 line	-	-	-
4630	POLQ	2544	ggccttcagcagcagcagcagcatttt	17183	464366	see also 4627 line	-	-	-
4631	SLC12A7	1822	cgccttcagcagcagcagcagcatttt	256830	640838	-	-	-	-
4632	SLC12A7	1824	ggccttcagcagcagcagcagcatttt	256831	640839	see also 4631 line	-	-	-
4633	SLC12A7	1825	ggccttcagcagcagcagcagcatttt	256832	640840	see also 4631 line	-	-	-
4634	NFAT5	1500	accgacagcagcagcagcagcatttt	7383	446445	transcription regulat	-	-	-
4635	NFAT5	1537	cagccttcagcagcagcagcagcatttt	7395	446446	or,	-	-	-
4636	NFAT5	1539	gccttcagcagcagcagcagcatttt	7396	446447	see also 4634 line	-	-	-
4637	NFAT5	1738	ggccttcagcagcagcagcagcatttt	7403	446454	see also 4634 line	-	-	-
4638	NFAT5	1766	ggccttcagcagcagcagcagcatttt	7407	446455	see also 4634 line	-	-	-
4639	NFAT5	1769	cagccttcagcagcagcagcagcatttt	7408	446456	see also 4634 line	-	-	-
4640	NFAT5	1788	accgacagcagcagcagcagcatttt	7409	446457	see also 4634 line	-	-	-
4641	NFAT5	1801	ctcttcagcagcagcagcagcatttt	7410	446458	see also 4634 line	-	-	-
4642	NFAT5	1839	ggccttcagcagcagcagcagcatttt	7413	446459	see also 4634 line	-	-	-
4643	NFAT5	1842	ggccttcagcagcagcagcagcatttt	7414	446460	see also 4634 line	-	-	-
4644	NFAT5	1923	cagccttcagcagcagcagcagcatttt	7416	446461	see also 4634 line	-	-	-
4645	NFAT5	2430	ggccttcagcagcagcagcagcatttt	7436	446462	see also 4634 line	-	-	-
4646	NFAT5	2432	cagccttcagcagcagcagcagcatttt	7437	446463	see also 4634 line	-	-	-
4647	NFAT5	2441	cagccttcagcagcagcagcagcatttt	7438	446464	see also 4634 line	-	-	-
4648	NFAT5	2446	tgcttcagcagcagcagcagcatttt	7439	446464	see also 4634 line	-	-	-

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4649	NEAT5	NM_006593.2	2740	atctaccacacataacttg	7448	446469	see also 4634 line		
4650	NEAT5	NM_006593.2	5458	casagctgctattttatcaaa	7513	446547	see also 4634 line		
4651	NUDO	NM_006600.2	216	agctctctgagagcaaga	307525	701878	cell cycle	-	-
4652	TCFL5	NM_006602.2	728	aggcctctacaaatttgtaact	41880	541088	or	-	-
4653	TCFL5	NM_006602.2	1351	ggctccagatccatttttggt	41892	541112	see also 4652 line	-	-
4654	STAG2	NM_006603.3	633	caagaactcgagatattcgaa	335844	673927	-	-	-
4655	STAG2	NM_006603.3	1341	ggctctatgacctgccaaga	335862	673954	see also 4654 line	-	-
4656	STAG2	NM_006603.3	1369	atgttgatgacacaaataaa	335863	673955	see also 4654 line	-	-
4657	STAG2	NM_006603.3	1432	gtctatcatctgctttttcag	335864	673958	see also 4654 line	-	-
4658	STAG2	NM_006603.3	2015	taccactgagcgttgaagaagc	335880	673975	see also 4654 line	-	-
4659	STAG2	NM_006603.3	2100	tggaaagtcttttaaaactta	335885	673979	see also 4654 line	-	-
4660	STAG2	NM_006603.3	2101	tggaaagtcttttaaaactta	335886	673980	see also 4654 line	-	-
4661	STAG2	NM_006603.3	2342	tgtctgaattcaaaactctga	335897	673993	see also 4654 line	-	-
4662	STAG2	NM_006603.3	2541	ctgacaacgtgaatactactg	335904	673999	see also 4654 line	-	-
4663	STAG2	NM_006603.3	2544	accaacgtgaatactactgta	335905	674005	see also 4654 line	-	-
4664	STAG2	NM_006603.3	2627	aggagagctgaacattttgaa	335907	674005	see also 4654 line	-	-
4665	STAG2	NM_006603.3	3336	ctgatctctaaccaaatcttt	335925	674026	see also 4654 line	-	-
4666	STAG2	NM_006603.3	3865	caactttaaattgagtaaca	335940	674036	see also 4654 line	-	-
4667	MAP3K2	NM_006609.2	470	aaftacaacagctactbaattag	89197	507089	kinase related	protein serine/threonine kinase	-
4668	MAP3K2	NM_006609.2	631	tgcgggaataggctacttaact	89204	507089	see also 4667 line	-	-
4669	MAP3K2	NM_006609.2	633	gcccgagatggctacttaact	89205	507100	see also 4667 line	-	-
4670	MAP3K2	NM_006609.2	634	ccgggaatgctctacttaact	89206	507101	see also 4667 line	-	-
4671	MAP3K2	NM_006609.2	1287	ggaccacgaaggaagtaagtc	89231	507117	see also 4667 line	-	-
4672	MAP3K2	NM_006609.2	1348	ggaccacgaaggaagtaagtc	89233	507120	see also 4667 line	-	-
4673	MAP3K2	NM_006609.2	1424	ggccgggaattctacttaatt	89237	507121	see also 4667 line	-	-
4674	MAP3K2	NM_006609.2	1881	tctctaaacgattttttttaga	89244	507135	see also 4667 line	-	-
4675	MAP3K2	NM_006609.2	1937	gaagcacaatgtttgctatttc	89245	507136	see also 4667 line	-	-
4676	CHL1	NM_006614.2	1386	gagaacctaaccacaataaag	317600	677689	signal transduction	-	-
4677	CHL1	NM_006614.2	2487	ctcaaccaagaagtaagtatta	317643	677725	see also 4676 line	-	-
4678	CHL1	NM_006614.2	3086	agggtatcaaatgttgaaga	317662	677748	see also 4676 line	-	-
4679	PLU-1	NM_006618.2	1294	ccgggaaccccttctttctatcc	9468	767571	transcription regulat	-	-
4680	HBS1L	NM_006620.2	666	tgtcgcaaaatgttcaaaatg	57613	477638	signal transduction	-	-
4681	HBS1L	NM_006620.2	983	atgtatctggtcatcttctatcc	57620	477645	see also 4680 line	-	-
4682	AHCYL1	NM_006621.3	1244	ctgcacgaatcatctttgagtg	204262	554641	-	adenosylhomocyst cinase	-
4683	SNK	NM_006622.1	1171	tgtctaaggagacgaagttatcc	100958	767335	kinase related, cell cycle	protein serine/threonine kinase	-

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4684	BS99	NM_006624.1	310	tgtctctatgtcgaactctaa	23111	453069	cell cycle, transcription, regulat	DNA binding	-
4685	BS99	NM_006624.1	446	tccacgaagagctgtgtatg	23112	453075	see also 4684 line	-	-
4686	ZNF271	NM_006623.3	381	caataagcttcagactctata	44920	470645	-	DNA binding	-
4687	CYSLTR1	NM_006639.2	530	gttcctctatgtctctataaac	238995	623091	receptor activity, signal transduction	leukotriene receptor	-
4688	CYSLTR1	NM_006639.2	565	gttcagcttcgaagctatcaga	238996	623094	see also 4687 line	-	-
4689	CYSLTR1	NM_006639.2	568	agctctccaaatgcacatatta	238997	623097	see also 4687 line	-	-
4690	CYSLTR1	NM_006639.2	572	tccaagctatcatctgaattt	238999	623097	see also 4687 line	-	-
4691	CYSLTR1	NM_006639.2	627	tgcctctcctgtgtctctatt	239001	623100	see also 4687 line	-	-
4692	CYSLTR1	NM_006639.2	632	ctcgtgtgtctctctatgcca	239002	623102	see also 4687 line	-	-
4693	CYSLTR1	NM_006639.2	634	ccgtgtgtctctatcttcaaa	239003	623103	see also 4687 line	-	-
4694	CYSLTR1	NM_006639.2	780	tctcaattccaagaacttaattg	239910	623107	see also 4687 line	-	-
4695	CCR9	NM_006641.2	770	tctctctataacctcatctca	124413	528431	receptor activity, gpr,	-	-
4696	HSPH1	NM_006644.1	419	ccctcagctcaactcattgctc	85330	503677	signal transduction	-	-
4697	HSPH1	NM_006644.1	2826	tccaagaagcccaaatatgata	85381	503733	see also 4696 line	heat shock protein	-
4698	STAR10	NM_006645.1	691	ccccatggcgcctgaattca	336030	709669	-	-	-
4699	FRS2	NM_006654.2	287	caataaaccctctgaacaaattt	170564	567118	receptor activity, phosphatase, gpr, kinase, related,	-	-
4700	FRS2	NM_006654.2	516	gtgtgcctctcgaagaattat	170571	567124	signal transduction	-	-
4701	FRS2	NM_006654.2	521	ccgtctcgaagaattattttaac	170572	567127	see also 4699 line	-	-
4702	FRS2	NM_006654.2	1386	gtgtctcctataaactctagtc	170590	567142	see also 4699 line	-	-
4703	FRS2	NM_006654.2	1387	gaactccatataactctagatcc	170591	567143	see also 4699 line	-	-
4704	TUBGCP2	NM_006659.1	593	tccaagctatgctctctagaaa	308650	675924	-	-	-
4705	TUBGCP2	NM_006659.1	1025	tccaagctctgtgtctctcctc	308653	675930	see also 4704 line	-	-
4706	CLPX	NM_006660.3	592	aaactctcgcgaactatgtgtt	77223	498488	chaperonin ATPase	-	-
4707	CLPX	NM_006660.3	595	tactctcgaacagatctgtttgg	77224	498489	see also 4706 line	-	-
4708	CLPX	NM_006660.3	766	gaagatgtatcagattttcaaaa	77233	498499	see also 4706 line	-	-
4709	PDE10A	NM_006661.1	327	accoccaagctatgaattt	111139	569948	-	3', 5'-cyclic-nucleotide phosphodiesterase	-
4710	PDE10A	NM_006661.1	597	tcccttcgaagctcgaataatc	111149	569954	see also 4709 line	-	-
4711	PDE10A	NM_006661.1	1823	caactcctatctgcactactta	111189	569975	see also 4709 line	-	-
4712	PDE10A	NM_006661.1	2415	ccgtctcctatctgcctctctaa	111207	569983	see also 4709 line	-	-
4713	HPSE	NM_006665.2	1219	tgtctttatctgcataaat	202268	767269	-	-	-
4714	TPBG	NM_006670.3	1612	atgaagagctcattcttcagaa	312651	702710	-	-	-
4715	TPBG	NM_006670.3	1613	ctgaagagctatctatcagat	312652	702711	see also 4714 line	-	-
4716	FGI2	NM_006682.1	899	tctctcttcgacaaaggaag	329295	675987	-	-	-

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4717	FIGL2	NM_006892.1	909	accacgaatgaagcaatgcttc	325268	675589	see also 4716 line		
4718	FIGL2	NM_006892.1	910	accacgaatgaagcaatgcttc	325269	675590	see also 4716 line		
4719	FIGL2	NM_006892.1	1230	agcgcctacacgaagctattctt	325314	675600	see also 4716 line		
4720	FIGL2	NM_006892.1	1232	agcgcctacacgaagctattctt	325315	675601	see also 4716 line		
4721	ACT1A	NM_006893.2	947	tctctctctctctctctctcttc	286237	659082	-	-	molecular function unknown
4722	ORF	NM_006896.3	684	cacacacactgagcaccacacag	278925	668737	-	-	zinc binding
4723	NMP24	NM_006902.2	338	ctccactctctctctctctctcttc	153138	558905	-	-	-
4724	NMP24	NM_006902.2	619	gtgcctctctctctctctctcttc	153326	558905	see also 4723 line	-	-
4725	NMP24	NM_006902.2	1628	ggagactctctctctctctctcttc	153334	558912	see also 4723 line	-	-
4726	CPSF4	NM_006893.1	526	tctctctctctctctctctcttc	58903	482196	-	-	-
4727	BRD8	NM_006896.3	2109	agaagaactcagcagctctcttc	1606	634333	transcription_regulat	-	-
4728	BRD8	NM_006896.3	2195	agcctctctctctctctctcttc	1607	634334	see also 4727 line	-	-
4729	BRD8	NM_006896.3	2715	cgactctctctctctctctcttc	1620	634345	see also 4727 line	-	-
4730	SUGT1	NM_006704.2	986	aactctctctctctctctcttc	307560	725549	cell cycle	-	-
4731	TCERG1	NM_006706.2	343	tctctctctctctctctcttc	112492	708482	transcription_regulat	-	-
4732	TCERG1	NM_006706.2	442	aactctctctctctctctcttc	112496	708483	see also 4731 line	-	-
4733	TCERG1	NM_006706.2	1178	agcctctctctctctctcttc	112510	708486	see also 4731 line	-	-
4734	ASK	NM_006716.2	1274	aaccactctctctctctcttc	58077	461017	kinase related	-	-
4735	LRBA	NM_006726.1	1022	agcgaagctctctctctcttc	281555	688224	-	-	-
4736	LRBA	NM_006726.1	2709	tgcgcctctctctctctcttc	281620	688291	see also 4735 line	-	-
4737	LRBA	NM_006726.1	2711	gcgcctctctctctctctcttc	281621	688292	see also 4735 line	-	-
4738	LRBA	NM_006726.1	2933	gcgcctctctctctctctcttc	281626	688300	see also 4735 line	-	-
4739	LRBA	NM_006726.1	4263	gcgcctctctctctctctcttc	281655	688332	see also 4735 line	-	-
4740	LRBA	NM_006726.1	4274	gcgcctctctctctctctcttc	281656	688333	see also 4735 line	-	-
4741	LRBA	NM_006726.1	6036	atgcgcctctctctctctcttc	281710	688360	see also 4735 line	-	-
4742	LRBA	NM_006726.1	7356	gtgcgcctctctctctctcttc	281761	688401	see also 4735 line	-	-
4743	LRBA	NM_006726.1	7849	gtgcgcctctctctctctcttc	281774	688424	see also 4735 line	-	-
4744	LRBA	NM_006726.1	8736	agcgcgcctctctctctcttc	281789	688436	see also 4735 line	-	-
4745	DIAPH2	NM_006729.2	513	gtgcgcgcctctctctcttc	116558	521554	-	-	premature ovarian failure(早発閉経)
4746	DIAPH2	NM_006729.2	514	gtgcgcgcctctctctcttc	116559	521555	see also 4745 line	-	-
4747	DIAPH2	NM_006729.2	515	gtgcgcgcctctctctcttc	116560	521556	see also 4745 line	-	-
4748	DIAPH2	NM_006729.2	757	gtgcgcgcctctctctcttc	116570	521565	see also 4745 line	-	-
4749	DIAPH2	NM_006729.2	3062	agcgcgcctctctctctcttc	116639	521628	see also 4745 line	-	-
4750	FCMD	NM_006731.1	267	cacacacactctctctcttc	319895	697772	-	-	-
4751	FCMD	NM_006731.1	481	tgcctctctctctctctcttc	319900	697781	see also 4750 line	-	-
4752	FCMD	NM_006731.1	721	aactctctctctctctcttc	319911	697790	see also 4750 line	-	-
4753	FSHPRH1	NM_006733.1	747	accagcgcctctctctcttc	320326	758330	-	-	-
4754	FSHPRH1	NM_006733.1	903	ggagcgcctctctctctcttc	320327	758342	see also 4753 line	-	-
4755	FSHPRH1	NM_006733.1	2418	ggagcgcctctctctctcttc	320354	758392	see also 4753 line	-	-

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4756	HIVEP2	184	cgagctctaggcaaaagcctacc	338155	701028	transcription_regulat	DNA binding	-
4757	HIVEP2	1781	tggactcttcaaccctctataga	338198	701073	transcription_regulat	-	-
4758	HOXA2	282	tacgaatttgagcagagattgag	5037	444699	transcription_regulat	transcription factor	-
4759	HOXA2	303	tcccccctgcctgcagacattt	5038	444701	see also 4758 line	-	-
4760	HOXA2	360	ttcccctgcctgcagacatttc	5039	444702	see also 4758 line	-	-
4761	HOXA2	1190	tggagctgacctcaacaatgaca	5046	444711	phosphatase, cell cycle,	DNA dependent adenosinetriphosph	-
4762	MCN5	252	atgaactcaatgcctctacac	31908	461512	transcription_regulat	atase	-
4763	PP1R1A	372	tccnccgcaacgagaagatga	294204	664349	phosphatase, signal transduction	type 1 serine/threonine specific protein phosphatase	-
4764	PSKH1	204	agccctcttgatgcacdaagct	98293	501062	kinase related	inhibitor	-
4765	SNR2	610	tccgagagatcaaacacatctc	119001	523869	-	protein kinase CK2	-
4766	SNR2	611	ccggagagatcaaacacatctc	119002	523810	see also 4765 line	-	-
4767	SNR2	890	agctatcccccacacatctc	119008	523816	see also 4765 line	-	-
4768	UGP2	95	dgcagagatctgcacatgaagc	208034	449742	kinase, related	kinase	-
4769	UGP2	248	tgcctgagatctgcacatgaagc	209075	449746	see also 4768 line	-	-
4770	UGP2	1356	tccdcagagctcctctctcaatg	265525	742078	see also 4768 line	-	-
4771	N33	1087	aacgcagcagcagcagcagcagc	336315	506701	-	prostate cancer(前立腺癌)	-
4772	LZTR1	1244	agccctcttgatgcacatgaagc	177024	733323	-	Alzheimer disease(アルツハイマー病)	-
4773	BRAP	655	gaccatctacatctctgaagct	177025	733323	see also 4773 line	-	-
4774	BRAP	658	cgactctacatctctgaagct	6213	445404	transcription factor	-	-
4775	LMO4	1154	ggatcgtgttccatcatcaat	137230	535002	-	-	-
4776	ZNF-kaiso	1447	cactatgataatagtagatgag	137254	535017	see also 4776 line	-	-
4777	ZNF-kaiso	1977	tgcagcatcagctgttgaaatta	160242	541542	-	-	-
4778	TRIM10	842	agcactcaataagatgaaac	160242	541542	-	-	-
4779	MAL11	1544	atgctccaatccatcatagctc	133773	581304	apoptosis, signal transduction	-	-
4780	MAL11	1995	atgacacagatcagctaatcttc	133781	581315	kinase related	-	-
4781	TTID	1647	tgcacacacattcagcaaat	288504	711795	see also 4779 line	-	-
4782	SP3A3	174	aaccgagaggggtttgtatgaga	46813	486183	-	pre-mRNA splicing factor	-
4783	AP2M2	387	agcagcatctacaaagacatct	27805	672860	-	protein transporter	-
4784	STAR3	517	cgagcatcctctcttcgaagc	173626	570503	-	lipid binding protein	-
4785	PDIR	894	caactgacagctgagacattgga	224706	620013	-	protein disulfide isomerase	-
4786	TDE1	526	atggctttgtctctcaaat	327575	693322	-	-	-

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4787	STP1	NM_006819.1	1338	accctctcaagaattatcacacg	314140	706493	-	-	-	breast cancer(乳癌)
4788	COP56	NM_006833.4	307	caccctggaagaagaattatca	96229	476404	-	-	-	-
4789	COP56	NM_006833.4	386	cggatgtcttgaggtgtatcac	96230	476407	see also 4788 line	-	-	-
4790	COP56	NM_006833.4	387	tgagttcttgaggtgtatcac	96231	476408	see also 4788 line	-	-	-
4791	COP56	NM_006833.4	400	tgatctctggaatctatcaaac	96190	704950	-	-	-	-
4792	COP55	NM_006837.2	905	ggctacaaacctctgtatgaag	98205	704971	see also 4791 line	-	-	-
4793	COP55	NM_006837.2	996	agctcttaacacctctgtatgac	98210	704978	see also 4791 line	-	-	-
4794	MMT	NM_006839.1	2272	aagcccgaaatgacctagaagac	336462	740188	-	-	-	-
4795	MMT	NM_006839.1	2325	ggccagcgaatgacctagaagac	336467	740189	see also 4794 line	-	-	-
4796	TLK2	NM_006852.1	371	aggcctcttagggagctataaa	336474	516557	kinase, related,	-	-	-
4797	TLK2	NM_006852.1	372	ggcactcttagggagctataaat	336475	516558	cell cycle	-	-	-
4798	TLK2	NM_006852.1	1987	ggctgtactctatgtattatta	336482	516598	see also 4796 line	-	-	-
4799	TLK2	NM_006852.1	2187	ttccgcgaagccagtgtatcac	336485	516605	see also 4796 line	-	-	-
4800	TLK2	NM_006852.1	2188	ttccgcgaagccagtgtatcac	336486	516606	see also 4796 line	-	-	-
4801	TLK2	NM_006852.1	2190	cgcgaagccagtgtatcaccc	336487	516607	see also 4796 line	-	-	-
4802	ATF7	NM_006856.1	253	aagcctctctccactagtctcc	1155	759805	transcription_regulat	translation	-	-
4803	ATF7	NM_006856.1	1211	cagaaacttccactagtctctcc	1164	759823	or	regulator	-	-
4804	RY1	NM_006857.1	438	cagcgaacttccactagtctctcc	85845	717748	see also 4802 line	-	-	-
4805	RY1	NM_006857.1	439	cagcgaacttccactagtctctcc	85846	717749	see also 4804 line	-	-	-
4806	RA935	NM_006861.4	391	cggagctctctgttttctgaagc	110212	812221	signal transduction	protein transporter	-	-
4807	RA931	NM_006866.2	272	ggccttgcgaatgaactctcaaa	110136	518080	signal transduction	RAB small	-	-
4808	CENT1	NM_006869.1	1056	cgcgcgcgcgcgcgcgcgcgcgc	23967	453697	signal transduction	monomeric	-	-
4809	CENT1	NM_006869.1	1057	ggccgcgcgcgcgcgcgcgcgc	23968	453698	see also 4808 line	-	-	-
4810	ELF2	NM_006874.1	240	aagccctctctctatggaactct	3058	443249	transcription_regulat	or	-	-
4811	ELF2	NM_006874.1	784	aggaaagagggcctctgtatacgt	3077	443270	see also 4810 line	-	-	-
4812	SHOX2	NM_006884.1	40	cggcctgtctctcaagctctttt	11207	448380	transcription_regulat	transcription factor	-	-
4813	ATBF1	NM_006885.2	1239	cggcttaccgcgcgcgcgcgcgc	48	441838	transcription_regulat	regulator	-	-
4814	ATBF1	NM_006885.2	1276	ctcatctctcgaagatggtttg	49	441839	see also 4813 line	-	-	-
4815	ATBF1	NM_006885.2	1433	tcctgcctatcaagaatggtttc	53	441842	see also 4813 line	-	-	-
4816	ATBF1	NM_006885.2	2824	ggactcaacgtgtgtgtatcaaac	74	441862	see also 4813 line	-	-	-
4817	ATBF1	NM_006885.2	2850	tcctcctcgaagctgtgtatcac	75	441863	see also 4813 line	-	-	-
4818	ATBF1	NM_006885.2	9551	gtctcaacgtgtgtgtatcaaa	177	441921	see also 4813 line	-	-	-
4819	ATBF1	NM_006885.2	9786	ctctctggaacacatatttttcc	179	441927	see also 4813 line	-	-	-
4820	ATBF1	NM_006885.2	11366	ggaaagcgaacacctctgtttatt	186	441941	see also 4813 line	-	-	-
4821	ATBF1	NM_006885.2	11372	tggacacactgtattatcaactca	197	441942	see also 4813 line	-	-	-
4822	ATBF1	NM_006885.2	11760	tggacacactgtattatcaactca	198	441944	see also 4813 line	-	-	-
4823	DNMT3B	NM_006892.3	1001	acctctgtgtgtgtgtgtgtgtgt	25461	458608	-	-	-	-
4824	DNMT3B	NM_006892.3	1163	ggctctgacgcgcgcgcctttat	25464	458608	see also 4823 line	-	-	-

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4825	FM03	NM_006894.3	1203	ccgcctgcgcgcacacgaatgata	221322	608395	-	electron transfer flavoprotein	trimethylaminuria(トリメチルアミン尿症)
4826	HNMT	NM_006895.1	657	gtggagcttattctatgattc	214275	604390	-	histamine N-methyltransferase	asthma(喘息)
4827	HOX7	NM_006895.2	151	gtgcagcgcgtcttttagcaataa	5080	444737	transcription_regulat	or	-
4828	HOX7	NM_006895.2	155	atgcgcgtcttttagcaataaag	5082	444738	see also 4827 line	transcription factor	-
4829	HOXC9	NM_006897.1	139	ctctatctctcgcacgaatgaaga	5197	444835	transcription_regulat	or	-
4830	HOXC9	NM_006897.1	226	gttcgcagctcttagcattttctc	5198	444836	see also 4829 line	activator	-
4831	HOXC9	NM_006897.1	501	cgcagctcccgccgactactgt	5200	444838	see also 4829 line	-	-
4832	IDH3B	NM_006895.2	463	atgctcgtgcacacgaatctaga	220218	607484	-	-	-
4833	IDH3B	NM_006895.2	465	gactctgcacacgaatctagacc	220219	607485	see also 4832 line	-	-
4834	MYO9A	NM_006901.1	6771	ctctccgcgaactctcaataac	33720	679853	-	-	-
4835	MYO9A	NM_006901.1	6776	cgcagactctctcaataacactg	33721	679853	see also 4834 line	-	-
4836	MYO9A	NM_006901.1	6832	tgcaggaagacgaatacgaatg	33726	679857	see also 4834 line	-	-
4837	MYO9A	NM_006901.1	6847	atcgaatctctgcaatgctttg	33727	679858	see also 4834 line	-	-
4838	PRRX1	NM_006902.2	1117	cccttcacacgaagaagacttc	9986	447983	transcription_regulat	or	-
4839	PRRX1	NM_006902.2	1707	agccgcactgactactctctgc	10005	447983	see also 4838 line	-	-
4840	PRRX1	NM_006902.2	1797	atggcgcaggaatgatttttcc	10007	447987	see also 4838 line	-	-
4841	PPA2	NM_006903.3	266	cacgaagatgatcagcaggaat	166554	585759	phosphatase	-	-
4842	PRKOC	NM_006904.6	3112	gcacctgtgcagctgctttaag	205870	598484	kinase related	protein kinase CK2	agammaglobulinemia(鎌状細胞貧血症)、severe combined immunodeficiency disease(重症複合免疫不全症)
4843	PRKOC	NM_006904.6	5594	atgcctgtgtgtgaattcttc	205747	596561	see also 4842 line	-	-
4844	PRKOC	NM_006904.6	6680	atgaattgtatgaatactgcttg	205771	596601	see also 4842 line	-	-
4845	PRKOC	NM_006904.6	6685	gttttagcaaatcattgctgtta	205772	596602	see also 4842 line	-	-
4846	PRKOC	NM_006904.6	7787	tgcgactctctcttgcgaatgc	205810	596643	see also 4842 line	-	-
4847	RASGRF2	NM_006908.1	430	atgcgaatgactactactactg	296504	664876	-	-	-
4848	RBBP6	NM_006910.4	3251	cagagcgaagccgcgaattacc	135012	465522	cell cycle	-	-
4849	RORB	NM_006914.2	1157	cgtctacccaactttaccactt	10778	448156	transcription_regulat	steroid hormone receptor	-
4850	RORB	NM_006914.2	1518	cgtctctcaactccacttaataa	10786	448170	see also 4849 line	-	-
4851	RORB	NM_006914.2	1520	tgctctcaactccacttaataac	10787	448171	see also 4849 line	-	-
4852	RP2	NM_006915.1	301	tgcactgaagatgaacagtag	99703	514180	kinase, related	-	-
4853	SFRS1	NM_006924.3	568	gttgatttttgcagaagaaga	46983	488244	-	protein binding	-
4854	SFRS1	NM_006924.3	600	tgcattgtgaactgataacaa	46987	488248	-	pre-mRNA splicing factor	-
4855	SFRS1	NM_006924.3	692	cgtctgaactactgataactact	46988	488249	see also 4853 line	-	-
4856	SFRS1	NM_006924.3	695	tgcgaactcgtgataactactag	46989	488250	see also 4853 line	-	-
4857	SFRS1	NM_006924.3	698	tgcgaactcgtgataactactag	46990	488251	see also 4853 line	-	-
4858	SFRS1	NM_006924.3	832	gcctaacactcgtgaactgta	46992	488252	see also 4853 line	-	-
4859	SLV	NM_006928.2	1462	taactgtccagctgattgaag	303256	671730	-	-	-

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4860	SKIV2L	NM_006929.3	2348	tgccgtgtcgaagctctttttg	54817	486311	-	ATP dependent RNA helicase	-
4861	SLC6A9	NM_006934.1	338	ggcacaaccagtcggtttgtac	255776	640181	-	sodium/amino acid transporter	-
4862	SLC6A9	NM_006934.1	339	ggcacaaccagtcggtttgtact	255777	640182	see also 4861 line	-	-
4863	SLC6A9	NM_006934.1	545	ggagtcagccctctctcaaaag	255778	640185	see also 4861 line	-	-
4864	SLC6A9	NM_006934.1	546	ggagtcagccctctctcaaaag	255779	640186	see also 4861 line	-	-
4865	SYN1	NM_006950.2	1200	tgacacctctcctcagaatctttt	336634	524607	-	-	-
4866	SYN1	NM_006950.2	1202	tgacacctctcctcagaatctttt	336635	524608	see also 4865 line	-	-
4867	TAIF5	NM_006951.2	869	atctgactctcaaaaagaagac	12575	795205	transcription_regulat	-	-
4868	TAIF5	NM_006951.2	1555	ccatctgactctctaaagcaaa	12595	795228	see also 4867 line	-	-
4869	TAIF5	NM_006951.2	2200	tgccatcagctctcaagctaat	12621	795249	see also 4867 line	-	-
4870	TAIF5	NM_006951.2	2346	accacaacacacacactgtatca	12625	795258	see also 4867 line	-	-
4871	ZNF183	NM_006978.1	922	ggagctgcctctctctctcaga	67370	479244	nucleic acid binding	-	-
4872	ZNF183	NM_006978.1	924	ggctccatgctctctctcaga	67371	479245	see also 4871 line	-	-
4873	SLC39A2	NM_006979.1	1298	tgctgctgtgcacaaactctca	267133	654338	heavy metal ion transporter	-	-
4874	NR4A3	NM_006981.2	1930	ggcctgtgcgagcttttaacaga	8661	447340	transcription_regulat	-	extraskelatal myxoid chondrosarcoma(骨外性黏液性軟肉瘤), chondrosarcoma(軟骨肉瘤)
4875	NR4A3	NM_006981.2	1933	ctcaacacccagagctctgatt	8662	447341	see also 4874 line	-	-
4876	NR4A3	NM_006981.2	2182	agcttcaaacacactctcaagctaa	8666	447348	see also 4874 line	-	-
4877	NR4A3	NM_006981.2	2300	tgccagagctggaaccttgatc	8676	447355	see also 4874 line	-	-
4878	CAAT1	NM_006982.1	1104	gagcacacccgcgaatattctatg	1962	442530	transcription_regulat	-	-
4879	CAAT1	NM_006982.1	1105	agccacacccgcgaatattctatg	1963	442531	see also 4878 line	-	-
4880	ADAMTS1	NM_006986.2	2347	atgcatacagactgcacaaag	155214	556277	signal transduction	-	-
4881	SLC19A2	NM_006996.1	1351	ctgactctctctcagctctgact	179718	573018	zinc binding	-	-
4882	SLC19A2	NM_006996.1	1396	tgacttctgtctgctctctctgct	179721	573019	see also 4881 line	-	-
4883	TACC2	NM_006997.1	189	tgacttctgtctgctctctctgct	322198	686736	-	-	-
4884	TACC2	NM_006997.1	686	tgacttctgtctgctctctctgct	322206	686748	see also 4883 line	-	-
4885	TACC2	NM_006997.1	687	acccttaagcaaacctcaaaaacc	322207	686747	see also 4883 line	-	-
4886	TACC2	NM_006997.1	1110	agcctgaattctgactctctctctca	322212	686751	see also 4883 line	-	-
4887	POL.S	NM_006998.2	75	aggttctgaagctctgctcaaacct	36442	813358	-	-	-
4888	TLE4	NM_007005.3	919	tcctgtgtatcgtctgctcaaacct	284757	526109	-	-	-
4889	TLE4	NM_007005.3	1801	accctctctctcagcaactctctg	284773	526123	see also 4888 line	-	-
4890	DDX52	NM_007010.2	529	agccactctgacacagactctctca	59435	483376	-	-	-
4891	DDX52	NM_007010.2	1239	ctggccactctgacacagactctca	59451	483397	see also 4890 line	-	-
4892	WWP2	NM_007014.3	1333	aggacacagggctggctctctctca	336761	614950	-	-	-
4893	SOX30	NM_007017.2	1244	taactgagcgcctctctgaaatt	40601	467943	transcription_regulat	-	-
4894	SOX30	NM_007017.2	1398	accagcactagctccaaagctcaacc	40605	467946	see also 4893 line	-	-
4895	SOX30	NM_007017.2	1588	tctctcttaagcttttctcaatgt	40608	467950	see also 4893 line	-	-
4896	SOX30	NM_007017.2	1614	tctctgtaccacacagatactca	40609	467952	see also 4893 line	-	-

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4897	CEP1	NM_007018.3	477	taedtaactactctatcatat	275589	741261	-	-	-
4898	CEP1	NM_007018.3	478	actgaactacactctctctata	275590	741262	see also 4897 line	-	-
4899	CEP1	NM_007018.3	480	ggcaactactctctctctata	275591	741263	see also 4897 line	-	-
4900	CEP1	NM_007018.3	1144	ctccacgaactctctctctctct	275608	741282	see also 4897 line	-	-
4901	CEP1	NM_007018.3	1517	aaagctctctctctctctctct	275816	741281	see also 4897 line	-	-
4902	CEP1	NM_007018.3	2057	gaagctctctctctctctctct	275935	704002	see also 4897 line	-	-
4903	CGF2	NM_007023.1	151	tgagctctctctctctctctct	336786	531339	kinase, related	-	-
4904	CGF2	NM_007023.1	363	agagctctctctctctctctct	336797	531354	signal transduction	-	-
4905	CGF2	NM_007023.1	473	ccgcgcacgaactctctctct	336798	531355	see also 4903 line	-	-
4906	CGF2	NM_007023.1	601	atggaacagcctctctctctct	336800	531359	see also 4903 line	-	-
4907	CGF2	NM_007023.1	1491	ggcgaactctctctctctctct	336822	531376	see also 4903 line	-	-
4908	CGF2	NM_007023.1	1492	gcgaactctctctctctctct	336823	531377	see also 4903 line	-	-
4909	CGF2	NM_007023.1	1565	cgagctctctctctctctctct	336824	531379	see also 4903 line	-	-
4910	CGF2	NM_007023.1	2202	agagctctctctctctctctct	336841	531397	see also 4903 line	-	-
4911	CGF2	NM_007023.1	2503	cgagctctctctctctctctct	336849	531402	see also 4903 line	-	-
4912	CGF2	NM_007023.1	2505	caacattggaagcgaactctct	336850	531403	see also 4903 line	-	-
4913	CGF2	NM_007023.1	2742	ggcgaactctctctctctctct	336860	531409	see also 4903 line	-	-
4914	CGF2	NM_007023.1	2914	ggaggaacgaactctctctct	336866	531416	see also 4903 line	-	-
4915	CGF2	NM_007023.1	3049	aaagagcgaactctctctctct	336868	531417	see also 4903 line	-	-
4916	CGF2	NM_007023.1	3049	cgagctctctctctctctctct	336876	531422	see also 4903 line	-	-
4917	CGF2	NM_007023.1	3058	cgagctctctctctctctctct	336877	531423	see also 4903 line	-	-
4918	CGF2	NM_007023.1	3060	cgagctctctctctctctctct	336878	531424	see also 4903 line	-	-
4919	TOPBP1	NM_007027.2	384	agagctctctctctctctctct	126343	620033	-	-	-
4920	TOPBP1	NM_007027.2	518	cgagctctctctctctctctct	126345	620035	see also 4919 line	-	-
4921	HRIFB21	NM_007032.3	177	gaagccgcgactctctctctct	114044	751771	myosin II binding	-	-
4922	22	NM_007032.3	178	cgccgcgactctctctctctct	114045	751772	see also 4921 line	-	-
4923	DNAJB4	NM_007034.3	691	cgaggaagattctctctctctct	299044	668209	heart shock protein	-	-
4924	ADAMTSS	NM_007038.1	1269	cgagctctctctctctctctct	155606	556405	zinc binding	-	-
4925	ADAMTSS	NM_007038.1	1269	cgagctctctctctctctctct	155607	556406	see also 4924 line	-	-
4926	ADAMTSS	NM_007038.1	2033	tgagctctctctctctctctct	155621	556420	see also 4924 line	-	-
4927	PTPN21	NM_007039.2	670	agagctctctctctctctctct	193547	566563	phosphatase	-	-
4928	PTPN21	NM_007039.2	3341	aaaggaagcgaactctctctct	193580	567002	see also 4927 line	-	-
4929	PTPN21	NM_007039.2	3391	cgagctctctctctctctctct	193581	567003	see also 4927 line	-	-
4930	ATE1	NM_007041.1	1826	atgagcgaactctctctctctct	216113	603452	see also 4930 line	-	-
4931	ATE1	NM_007041.1	1826	tgagctctctctctctctctct	216114	603453	see also 4930 line	-	-
4932	ATE1	NM_007041.1	1827	cgagctctctctctctctctct	216115	603454	see also 4930 line	-	-
4933	KATNA1	NM_007044.2	161	atgagctctctctctctctctct	56520	504512	phosphatase, receptor activity, signal transduction, kinase, related	-	-
4934	PTPRT	NM_007050.3	4163	cgagcgaactctctctctctct	194988	588039	-	-	-

4835	PTPRT	NM_007050.3	4164	ggaccacagagctgtttctgtata	194989	589040	see also 4934 line		
4836	FAF1	NM_007051.2	695	atccatctctccctccctcagc	279805	67174	apoptosis	-	
4837	FAF1	NM_007051.2	717	ggacatccagctcagatgcagaaa	279806	67178	see also 4938 line		
4838	FAF1	NM_007051.2	1818	ggagaaagcagctcagatgcag	279826	67212	see also 4936 line		
4839	NOX1	NM_007052.3	1652	tggtcagcagcagtaaatcttg	223280	610237	channel	-	
4840	RPO155	NM_007055.2	1208	ggcccaacacctcggatgatgga	38672	808656	transcription_regulat	-	
4841	RPO155	NM_007055.2	1240	ggcaatctcctggccaaatctc	38674	808658	or	-	
4842	KPTN	NM_007055.2	200	ggcaagcctctccagcaaaatc	117887	747616	see also 4940 line	-	
4843	TBC1D8	NM_007055.2	2126	cgagttcttcagatcaactaaga	309052	707368	-	-	
4844	TRAF	NM_007064.1	3624	cgagttcttcagatcaactatgc	120932	501241	kinase-related	-	
4845	JM5	NM_007075.1	502	ggcatctgcctacgacaagctcg	336932	772541	-	-	
4846	NUDT6	NM_007083.3	458	tggtctgcaagatcgaaataaa	165397	770508	-	-	
4847	WDHD1	NM_007086.1	438	aggagctgagtcctccctgtttaa	43287	457784	transcription_regulat	-	
4848	WDHD1	NM_007086.1	2384	tgaaactctgctcaactgaact	43352	457652	see also 4947 line	-	
4849	WDHD1	NM_007086.1	2439	ttctctctctcgaaatctaac	43356	457657	see also 4947 line	-	
4850	WDHD1	NM_007086.1	2955	ggcatctgcacatctctatttcc	43376	457673	see also 4947 line	-	
4851	NDUFY1	NM_007103.2	136	ggacacgacacacccacgaagaa	222915	610147	NADH dehydrogenase (ubiquinone) signal sequence	-	Leigh syndrome(U-症候群)
4852	SSR3	NM_007107.2	430	aagaakaaagtctgctatttata	177258	721925	-	-	
4853	TEP1	NM_007110.3	1718	tgagcagttcttcattctgaatttc	55414	695062	-	-	neuroblastoma(神経芽細胞腫)
4854	TEP1	NM_007110.3	3106	ctgcccaagctctcatctcaactc	55447	695091	see also 4953 line	-	
4855	TEP1	NM_007110.3	7754	ctggaaggagcagatgctgaagc	55512	699143	see also 4953 line	-	
4856	USF1	NM_007122.2	591	tggtcaactctctgtgctgtgt	43241	470168	USF3/USF44 complex	-	retinitis pigmentosa(色素性網膜炎), Senear-Usher syndrome(セナー-アシャー症候群)
4857	USH2A	NM_007123.3	1191	aagaatgcaagattttcgtatt	292573	662357	-	-	
4858	VIL1	NM_007127.1	2168	atcctctcaagtggatgaaccic	114926	524894	structural constituent of cytoskeleton	-	
4859	VIL1	NM_007127.1	2178	gttgatgaacacaaatctatag	114927	524895	see also 4958 line	-	
4860	ZNF184	NM_007149.1	1050	gagtgcaaacctctaaacacac	44362	807797	-	-	
4861	DTIS159E	NM_007156.2	1035	gfatgtgttgaagaagatattc	24691	457739	transcription_regulat	-	
4862	SLMAP	NM_007156.1	347	ggccagctctagctgacagcaag	312457	653228	or	-	Alzheimer disease(アルツハイマー病)
4863	SLMAP	NM_007156.1	348	cccaagctctctagctgacagct	312458	653229	see also 4962 line	-	
4864	SLMAP	NM_007156.1	418	acccatctgaaacaaagctgaag	312461	653232	see also 4962 line	-	
4865	SLC14A2	NM_007163.2	1404	ctggagagctgagctgagctgag	163849	561181	-	-	urea transporter
4866	PICALM	NM_007166.1	565	ttctaacagagctgagctgagct	302707	761141	-	-	
4867	PICALM	NM_007166.1	834	ttctaacagagctgagctgagct	302713	761155	see also 4966 line	-	
4868	PICALM	NM_007166.1	1436	atgagctgcttccctcaacttaat	302728	761178	see also 4966 line	-	

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4969	PICALM	NM_007166.1	1587	cccttcagctgactgaatgctg	302732	781184	see also 4986 line		
4970	PICALM	NM_007166.1	1585	agagctgactgagatgaatgctt	302738	781203	see also 4986 line		
4971	ABCA8	NM_007168.1	2890	ctgagctactgagatgaatgata	69298	491493	—	—	—
4972	ABCA8	NM_007168.1	2991	tggctactgagatgagttgaac	69299	491493	see also 4971 line	Walker-Warburg syndrome(ウォーナー・ワーブルグ症候群)	
4973	POMT1	NM_007171.2	1463	ctctctgctcattgactatataca	337000	600314	—	—	—
4974	POMT1	NM_007171.2	2374	agagctctgctctggaagacagc	337011	600328	see also 4973 line	—	—
4975	QIT	NM_007174.1	1195	ctgagatgacatccatcaatttt	77012	498318	kinase related	—	—
4976	QIT	NM_007174.1	1197	gagctgacatccatcaattttga	77013	498319	see also 4975 line	—	—
4977	QIT	NM_007174.1	1219	atgaacagagaagaagatctgtg	77015	498320	see also 4975 line	—	—
4978	QIT	NM_007174.1	1461	cgagaaatgacccgctttacatcg	77022	498325	see also 4975 line	—	—
4979	QIT	NM_007174.1	3810	caggtctctctcgacacatca	77059	498349	see also 4975 line	—	—
4980	QIT	NM_007174.1	4207	tggacacagacatccaaatgct	77065	498353	see also 4975 line	—	—
4981	QIT	NM_007174.1	4888	ttctctacgctgagatgctctg	77086	498370	see also 4975 line	—	—
4982	C14orf1	NM_007176.1	147	gagctctcagacacacacttttc	277438	667515	—	molecular function	unknown
4983	C14orf1	NM_007176.1	148	agctctcagacacacacttttc	277439	667518	see also 4982 line	—	—
4984	C14orf1	NM_007176.1	189	tggacacacacacttggatgct	277442	667518	see also 4982 line	—	—
4985	PKP3	NM_007183.1	1223	tgcacacacacacttggatgct	292246	709198	—	structural molecule	—
4986	WBP4	NM_007187.3	239	atgcacatgcagctgataacacga	55728	475958	—	—	—
4987	WIF1	NM_007191.2	970	tggaggaatgactgagttgataa	206349	596785	kinase, related,	—	—
4988	WIF1	NM_007191.2	972	gagatgaatgactgagttgataa	206350	596789	see also 4987 line	structural molecule	—
4989	WIF1	NM_007191.2	1226	cgagatcactgactgactcacta	206357	596792	see also 4987 line	transcription_regulat	—
4990	SUPT16H	NM_007192.2	1081	caagatggtgactgactataact	57754	477813	or	—	—
4991	SUPT16H	NM_007192.2	1083	gaggtgactgactataacttca	57755	477814	see also 4990 line	—	—
4992	SUPT16H	NM_007192.2	2783	tcctcttgactgactgactgagt	57788	477865	see also 4990 line	—	—
4993	SUPT16H	NM_007192.2	2785	ctctcttgactgactgactgagt	57789	477868	see also 4990 line	—	—
4994	SUPT16H	NM_007192.2	3035	cccttcacactgactaataactg	57794	477870	see also 4990 line	calcium-dependent	—
4995	ANXA10	NM_007193.2	451	gagaaatgctcctgagaaatct	137878	544044	—	phospholipid	—
4996	CHEK2	NM_007194.2	1375	ctctgataatactcactgattat	76998	498207	kinase, related,	—	—
4997	CHEK2	NM_007194.2	1381	atgctgactgactgactgactg	76999	498208	cell cycle,	—	—
4998	CHEK2	NM_007194.2	1419	tactatctgacaaactctctg	76901	498212	signal transduction	—	—
4999	POLL	NM_007195.1	611	atgctgagagccctgataatca	208824	669919	see also 4998 line	—	—
5000	POLL	NM_007195.1	613	ctctggagacactgactgactg	208825	669920	see also 4999 line	receptor activity,	—
5001	IPRAK3	NM_007199.1	224	atgtctgtcattgagaaagat	85698	504491	kinase, related,	—	—

Li-Fraumeni Syndrome(リー・フラウマニ症候群)
 肺、breast cancer(乳癌), prostate cancer(前立腺癌), non-small-cell lung cancer(非小細胞肺癌), osteosarcoma(骨肉腫)

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5002	AKAP10	NM_007202.2	1215	atcgagatgacccattctgaa	128544	kinase related	531780	signal transducer	—
5003	AKAP10	NM_007202.2	1216	tgcagatcacattctctgaa	128545	signal transducer	531781	see also 5002 line	—
5004	AKAP10	NM_007202.2	1498	atgctctctcagatgaataatt	128551	see also 5002 line	531770	see also 5002 line	—
5005	AKAP10	NM_007202.2	2000	atgctctctcagatgaataattg	128561	see also 5002 line	531786	see also 5002 line	—
5006	DDX20	NM_007204.3	579	aggctcctgctcagatttaatt	24807	438064	—	DNA binding	—
5007	DDX20	NM_007204.3	580	ggctcctgagctcagatttaatt	24808	438065	see also 5006 line	—	—
5008	DDX20	NM_007204.3	581	ggctcctgagctcagatttaattg	24809	438066	see also 5006 line	—	—
5009	DDX20	NM_007204.3	582	ccctcctgagctcagatttaattg	24810	438067	see also 5006 line	—	—
5010	DDX20	NM_007204.3	958	tccagagacaataatttgattg	24825	438081	see also 5006 line	—	—
5011	DDX20	NM_007204.3	1490	aggctcctgttggctcattg	24842	438104	see also 5006 line	—	—
5012	DDX20	NM_007204.3	1513	ggctcagactgaactcctctg	24843	438105	see also 5006 line	phosphatase,	—
5013	DUSP10	NM_007207.3	343	aggctcagactgaactcctctg	195510	598442	kinase related	—	—
5014	GALNT6	NM_007210.2	534	cacagacgctgctgactcattg	211132	599840	—	—	—
5015	GALNT6	NM_007210.2	892	atcgtcacactgaacttaacc	211134	599843	see also 5014 line	—	—
5016	GALNT6	NM_007210.2	1099	ggacnctcgtcactcattgaa	211140	599847	see also 5014 line	—	—
5017	GALNT6	NM_007210.2	1100	agccactcgtcactcattgaa	211141	599848	see also 5014 line	—	—
5018	GALNT6	NM_007210.2	1431	tctctcactcgtcactcattg	211147	599863	see also 5014 line	—	—
5019	RNF2	NM_007212.2	382	gtgcacactcttctgaaatg	337083	451147	—	—	—
5020	RNF2	NM_007212.2	990	agccacactcttctgaaatg	337107	451171	see also 5019 line	—	—
5021	SEC63	NM_007214.2	263	tctcgttaaacatactcagaac	270475	652384	—	protein transporter	—
5022	SEC63	NM_007214.2	303	gtgactcgttgaactcctaa	270478	652385	see also 5021 line	—	—
5023	SEC63	NM_007214.2	304	tgtatcgtctgaactcctaa	270479	652386	see also 5021 line	—	—
5024	POLG2	NM_007215.1	1206	accctcttgagccctcattg	19697	464274	—	zeta DNA polymerase	—
5025	POLG2	NM_007215.1	1207	ccctcttgagccctcattg	19698	464275	see also 5024 line	—	—
5026	RNF139	NM_007218.3	535	atccgatctatctcgtctgt	250916	786618	receptor activity,	—	—
5027	RNF139	NM_007218.3	1382	ggagacattctcgtcattg	250951	786651	signal transduction	—	—
5028	RNF139	NM_007218.3	1386	ggcttattcctgaagagaac	250952	786652	see also 5026 line	—	—
5029	RNF139	NM_007218.3	2067	ggcttattcctgaagactctgt	250980	786682	see also 5026 line	—	—
5030	RNF139	NM_007218.3	2069	cgttattcctgaagactctgtcc	250981	786683	see also 5026 line	—	—
5031	RNF139	NM_007218.3	2089	tccanigtgcacataagaatt	250982	786684	see also 5026 line	—	—
5032	RNF24	NM_007219.2	280	tccanigtgcacataagattg	337234	801749	—	—	—
5033	CASB	NM_007220.2	827	gtctctcactcgtcactaaag	156253	557309	—	zinc binding	—
5034	ZHX1	NM_007222.2	776	tgcactcttgcagactcga	14414	450237	—	—	—
5035	ZHX1	NM_007222.2	781	tcttgcactcttgcagactcga	14415	450238	see also 5034 line	—	—
5036	ZHX1	NM_007222.2	1292	acclcaactcgtcattgaa	14438	450263	see also 5034 line	—	—
5037	ZHX1	NM_007222.2	1516	taccctcagactcgtcattg	14439	450264	see also 5034 line	—	—
5038	ZHX1	NM_007222.2	1823	cagcactcagactcgtcattg	14440	450265	see also 5034 line	—	—
5039	ZHX1	NM_007222.2	2008	cagcactcagactcgtcattg	14454	450284	see also 5034 line	—	—
5040	ZHX1	NM_007222.2	2776	tgcatactcagactcattacc	14468	450307	see also 5034 line	—	—

5077	BRCA1	NM_007294.1	1247	atgtctcttgatacaataaat	15947	transcription_regulat or, apoptosis, cell cycle,	-	breast cancer(乳癌), Li-Fraumeni syndrome(リー・フrouメンニ症候群), ovarian cancer(卵巣性肉腫), non-small-cell lung cancer(非小細胞肺癌)
5078	GRIN1	NM_007327.1	3771	agcagatgctctccagaaacacg	165848	signal transduction	-	-
5079	GRIN1	NM_007327.1	3843	agcagagagcagctctgagagag	165850	signal transduction	-	-
5080	TRPA1	NM_007332.1	3102	agcagagagcagctctgagagag	154202	channel	-	-
5081	ITFI	NM_007344.2	2196	aactccaaagagcagctctctgg	337449	transcription_regulat or	-	-
5082	PAXIP1L	NM_007495.2	3381	cgcgcagcagcagcagcagcag	325589	transcription_regulat or	-	-
5083	M98	NM_007358.1	637	tgtgttcacacacacttatctg	31512	transcription_regulat or	-	-
5084	M98	NM_007358.1	999	caggttcagcagcagcagcagc	31520	transcription_regulat or	-	-
5085	M98	NM_007358.1	1049	tgcacacactctctcttctaac	31524	transcription_regulat or	-	-
5086	M98	NM_007358.1	1060	ctgtcttcacacactctcttct	31527	transcription_regulat or	-	-
5087	M98	NM_007358.1	1106	ctgacacttgagctctgacacac	31530	transcription_regulat or	-	-
5088	M98	NM_007358.1	1114	gagcttatgacacactaatgaa	31531	transcription_regulat or	-	-
5089	M98	NM_007358.1	1270	tgtgtttgtctgacactctgt	31532	transcription_regulat or	-	-
5090	MLN51	NM_007359.3	1853	cagttatcttgagagcagcact	282164	molecular function	-	-
5091	MLN51	NM_007359.3	1887	cagttatcttgagagcagcact	282166	molecular function	-	-
5092	NID2	NM_007361.2	3945	atcaatccagagcagcagctg	127182	collagen binding	-	-
5093	NID2	NM_007361.2	3946	atcaatccagagcagcagctg	127183	collagen binding	-	-
5094	RASA3	NM_007368.2	1478	tccaatccagagcagcagctg	284219	GTPase activator	-	-
5095	DDX43	NM_007372.1	857	gaagctatctctactctctctg	39206	GTPase activator	-	-
5096	DDX43	NM_007372.1	2008	gaagctatctctactctctctg	39206	GTPase activator	-	-
5097	SHOC2	NM_007373.1	794	atgctgtgttcagcagcagcag	284214	molecular function	-	-
5098	SHOC2	NM_007373.1	795	tgtctgtgttcagcagcagcag	284215	molecular function	-	-
5099	SHOC2	NM_007373.1	1004	ctgtgtgtgttcagcagcagcag	284223	molecular function	-	-
5100	SHOC2	NM_007373.1	1477	tgtgtgtgttcagcagcagcag	284240	molecular function	-	-
5101	SHOC2	NM_007373.1	1695	tacagagactgtgttcagcagcag	284246	molecular function	-	-
5102	SHOC2	NM_007373.1	1994	agagctgtgttcagcagcagcag	284251	molecular function	-	-
5103	MIP	NM_012064.1	556	ggcagcagcagcagcagcagcag	273968	translation	-	-
5104	ATF5	NM_012068.2	937	ccgagagcagcagcagcagcag	21859	translation	-	-
5105	ATP1B4	NM_012069.2	538	tgcacactcaagctcttcagcag	191991	receptor activity	-	-
5106	ATRN	NM_012070.2	345	agagcagcagcagcagcagcag	173949	receptor activity	-	-
5107	ATRN	NM_012070.2	2773	gctgtgtgtgtgtgtgtgtgtgt	174021	receptor activity	-	-
5108	ATRN	NM_012070.2	3119	gagcagcagcagcagcagcagcag	174030	receptor activity	-	-

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5109	G10orf8	NM_012071.1	294	ggccatgaagactgttttcaag	337477	767006	signal transduction	-	-	-
5110	G10orf8	NM_012071.1	536	cagatgttgctggaggaactaa	337480	767013	see also 5109 line	-	-	-
5111	ORE1	NM_012078.1	2184	cagagagagcgtacacactgt	140907	546553	-	-	-	-
5112	ZFPM2	NM_012082.2	749	cagctctctcaagaaggtata	113403	528733	-	-	-	-
5113	ZFPM2	NM_012082.2	1076	tgggtgtatcatatcatcaat	113424	528768	see also 5112 line	-	-	-
5114	ZFPM2	NM_012082.2	2061	tacggacactcagcttaagccc	113449	528724	see also 5112 line	-	-	-
5115	APPL	NM_012096.1	106	cgcgcagacagctttacttag	128011	755587	kinase, related,	-	-	-
5116	APPL	NM_012096.1	184	agctatcatcagcttatgatag	128019	755590	see also 5115 line	-	-	-
5117	APPL	NM_012096.1	285	gaagtatcatgaagtatgaagc	128022	755593	see also 5115 line	-	-	-
5118	APPL	NM_012096.1	672	cgctcagatgaattcttaag	128035	755609	see also 5115 line	-	-	-
5119	APPL	NM_012096.1	1143	ctctatgaagcttgatctgtaca	128053	755628	see also 5115 line	-	-	-
5120	APPL	NM_012096.1	1482	gaagcagagctacaaatccattt	128063	755637	see also 5115 line	-	-	-
5121	APPL	NM_012096.1	1483	ggagcagctgccaatccattt	128064	755638	see also 5115 line	-	-	-
5122	APPL	NM_012096.1	1484	ggccagctgacaaatccattt	128065	755639	see also 5115 line	-	-	-
5123	APPL	NM_012096.1	1543	ttcatctctcatcatttta	128067	755640	see also 5115 line	-	-	-
5124	APPL	NM_012096.1	1853	ctcatctcatcctctattatt	128076	755683	see also 5115 line	-	-	-
5125	APPL	NM_012096.1	1858	ctcatctcatcctctattatt	128077	755685	see also 5115 line	-	-	-
5126	APPL	NM_012096.1	1949	ctcatctcatcctctattatt	128079	755659	see also 5115 line	-	-	-
5127	ARL5	NM_012097.2	543	tccatctacacacacattttt	108530	807605	signal transduction	-	-	-
5128	ARL5	NM_012097.2	548	tccatctacacacacattttt	108531	807606	see also 5127 line	-	-	-
5129	ANGPTL2	NM_012098.2	1911	tccgctgagcagctctactact	171174	655801	receptor binding	-	-	-
5130	ANGPTL2	NM_012098.2	1919	aggctcttctctctcagaag	171175	655802	see also 5129 line	-	-	-
5131	DNPEP	NM_012100.1	657	tccatctgcagcgaatatcac	188614	590444	-	-	-	-
5132	AUP1	NM_012103.2	154	ggcggagcagctcttctactg	216116	603480	-	-	-	-
5133	AUP1	NM_012103.2	977	cccttccagcagctatcaagtaa	216128	603491	see also 5132 line	-	-	-
5134	BAOE	NM_012104.2	906	gtccctgtgctgccaacatttc	184961	579250	-	-	-	-
5135	BAOE	NM_012104.2	1568	caacttcccaagcagctgttaca	184971	579258	see also 5134 line	-	-	-
5136	BAOE	NM_012104.2	1571	gtcccaagcagctgttacaagt	184972	579258	see also 5134 line	-	-	-
5137	CHIC2	NM_012110.2	424	tccgttcaagctacgtcttttgg	278676	736562	-	-	-	-
5138	CHIC2	NM_012110.2	651	accagcaagctcgttggaagt	278681	736569	see also 5137 line	-	-	-
5139	CHIC2	NM_012110.2	787	atgtcatctctcatgaatttta	278685	736574	see also 5137 line	-	-	-
5140	AHSA1	NM_012111.1	1081	aggctgtgagcagctactacttt	337515	759648	-	-	-	-
5141	AHSA1	NM_012111.1	1083	ggctgcagcagctactacttt	337516	759649	see also 5140 line	-	-	-
5142	AHSA1	NM_012111.1	1083	ggctgcagcagctactacttt	337517	759650	see also 5140 line	-	-	-
5143	GDZAP	NM_012120.1	380	gcctctgctgaagctactttttt	286837	533336	signal transduction	-	-	-
5144	GDZAP	NM_012120.1	721	ctgtgaaattgaaattttttt	286942	533342	see also 5143 line	-	-	-
5145	GDZAP	NM_012120.1	1808	tggcgaatttgcgaagaaata	286975	533353	see also 5143 line	-	-	-
5146	GHORC1	NM_012124.1	381	ccctgagcagctattgatttt	278691	719563	-	-	-	-
5147	DDAH1	NM_012137.2	547	ctgaattctgagctacttt	203785	595522	signal transduction	-	-	-
5148	DDZ28	NM_012141.1	1106	gtgtcccaagctgctctactc	58960	492925	receptor activity	-	-	-
5149	DDZ28	NM_012141.1	1109	tcttcccaagctgctctactc	58981	492926	see also 5148 line	-	-	-

amaurosis congenita of Leber (レーバー先天性黒内障), retinitis pigmentosa (色素性網膜炎)

non-small-cell lung cancer (非小細胞肺癌)

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5150	DDX26	NM_012141.1	1140	tccctctgcagaagacacaaag	50984	482927	see also 5148 line	
5151	EHF	NM_012153.2	173	aattggcgaatgactcaacc	2979	443200	-	-
5152	EPB41L1	NM_012156.2	2823	tccatcatctgggaagatgac	117029	527810	-	-
5153	EPB41L1	NM_012156.2	2993	accacctctaccacaacatgt	117030	527811	see also 5152 line	-
5154	FBX1.3A	NM_012158.1	594	cagagctgtacaacaactatt	228309	706157	-	-
5155	FBX1.3A	NM_012158.1	1381	cagaagctggcaaaatttcca	228346	706185	see also 5154 line	-
5156	FBX1.3A	NM_012158.1	1410	ctctatctatgctcttttgaat	228348	706186	see also 5154 line	-
5157	FBX1.3A	NM_012158.1	1490	tctctaccacaataatttttg	228352	706192	see also 5154 line	-
5158	FBX1.4	NM_012160.3	384	cagttctgccactgtttttat	324156	782018	-	-
5159	FBX1.4	NM_012160.3	924	ggcagcttaaacctgtattaa	324184	782029	see also 5158 line	-
5160	FBX1.4	NM_012160.3	1907	tgcagccactttctattgaag	324201	782044	see also 5158 line	-
5161	FBX1.4	NM_012160.3	2048	ctgcacatctgattccagaagt	324220	782064	see also 5158 line	-
5162	FBX1.5	NM_012161.2	176	tactgtgcanaattctcaaac	228382	803840	-	-
5163	FBX1.5	NM_012161.2	441	asagagatttgagacttttaca	228386	803853	see also 5162 line	-
5164	FBX1.5	NM_012161.2	1250	cagagctctgcactcttact	228408	803873	see also 5162 line	-
5165	FBXW2	NM_012164.2	333	atgtctcgtctcagacttacc	228828	688783	-	ubiquitin-protein ligase
5166	FBXW2	NM_012164.2	334	tgtctgtactctcagacttact	228828	688784	see also 5165 line	-
5167	FBXW2	NM_012164.2	379	cagctgaabaagctctatctg	228832	688789	see also 5165 line	-
5168	FBXW2	NM_012164.2	412	gtctggcagcagctctatctg	228833	688790	see also 5165 line	-
5169	FBXW2	NM_012164.2	414	gtctggcagcagctctatctg	228833	688791	see also 5165 line	-
5170	FBXW2	NM_012164.2	441	gtctggcagcagctctatctg	228833	688793	see also 5165 line	-
5171	FBXW2	NM_012164.2	567	tgcagagtgagctcttactct	228838	688796	see also 5165 line	-
5172	FBXW2	NM_012164.2	570	caaatgtgtcagctctactaca	228839	688799	see also 5165 line	-
5173	FBXW2	NM_012164.2	572	aggtgtgtgtgtctctactaca	228840	688800	see also 5165 line	-
5174	FBXW2	NM_012164.2	986	ctggagatgcactctcttaagt	228846	688807	see also 5165 line	-
5175	FBXO22	NM_012170.2	588	tgcacatgcctctcaggaatag	337725	732191	-	-
5176	FBXO22	NM_012170.2	589	agcactgcctctcaggaataga	337726	732192	see also 5175 line	-
5177	FBXO22	NM_012170.2	593	atgcactgcaggaatagaatatt	337727	732193	see also 5175 line	-
5178	FBXO3	NM_012175.2	358	caggttctctcaggtgttttt	228598	710730	-	-
5179	FBXO3	NM_012175.2	359	aggttctctcaggtgttttttc	228599	710731	see also 5178 line	-
5180	FBXO7	NM_012179.2	467	tgtctctcatatggatgttttc	228708	768713	-	ubiquitin-protein ligase
5181	FBXO7	NM_012179.2	468	tgtctctcatatggatgtttct	228709	768714	see also 5180 line	-
5182	FBXO8	NM_012180.1	908	gagagatctttttctatctacc	294965	670789	guanyl-nucleotide release factor	-
5183	FBXO8	NM_012180.1	1053	ctgtgcactctttgtttact	294969	670807	see also 5182 line	-
5184	CABYR	NM_012189.2	2117	cccagtgaaagatctatctcaaa	298842	666171	kinase-related, signal transduction receptor activity,	-
5185	FZD4	NM_012193.2	1140	aaagatctctctgtttttgaag	242548	630620	gpcr, signal transduction	-
5186	GAPCEN4	NM_012197.2	3257	accgacacatcagctctctaaag	120545	780048	cell cycle	-

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5227	XRN2	NM_012255.2	595	tgcataatgctcttcgacttaca	55784	703551	see also 5224 line
5228	XRN2	NM_012255.2	614	tgcataatgctcttcgacttaca	55785	703552	see also 5224 line
5229	XRN2	NM_012255.2	619	agctgctcttcgacttaca	55790	703553	see also 5224 line
5230	XRN2	NM_012255.2	1167	acgtgctcttcgacttaca	55813	703571	see also 5224 line
5231	XRN2	NM_012255.2	1246	acgtgctcttcgacttaca	55816	703573	see also 5224 line
5232	XRN2	NM_012255.2	1404	ctcagctcttcgacttaca	55820	703574	see also 5224 line
5233	HBPI	NM_012257.2	612	tgcacaaagtthacatctctatg	27938	459928	transcription_regulat
5234	HBPI	NM_012257.2	960	tgtctgactcttcgacttactat	27944	459935	or
5235	HBPI	NM_012257.2	1007	gcagctcttcgacttactat	27946	459937	see also 5233 line
5236	HBPI	NM_012257.2	1081	gcacacctctctcttcgacttaca	27949	459939	see also 5233 line
5237	HBPI	NM_012257.2	1464	gtgtcctcactctcctactaagt	27963	459951	see also 5233 line
5238	HBPI	NM_012257.2	1466	gtgtcctcactctcctactaagt	27964	459952	see also 5233 line
5239	HEY1	NM_012258.2	181	tctgacgcgaatggaagacttga	4736	459973	transcription_regulat
5240	HEY2	NM_012259.1	105	gactctgctgaacgcgaacactta	4753	459983	transcription_factor
5241	HPOL2	NM_012260.1	277	agcgaacgcgactctctctctgc	166019	502669	or
5242	HS2ST1	NM_012262.2	418	cctgctgctgacgactctctctgc	218769	605372	or
5243	HS2ST1	NM_012262.2	639	atgactctgctgacgacttaca	218773	605380	see also 5242 line
5244	DNAJB5	NM_012266.2	535	gtgactctcctcctctctctctct	290055	668469	or
5245	DNAJB5	NM_012266.2	539	ctcactcctcctcctctctctct	290056	668469	see also 5244 line
5246	PLD3	NM_012268.1	1563	cctgctctcactcctcctctctct	191518	629520	or
5247	HYPC	NM_012272.1	2251	agactctgctcctcctcctctct	337937	707413	or
5248	HYPC	NM_012272.1	2256	tctgctcactcctcctcctctct	337938	707414	see also 5247 line
5249	HYPC	NM_012272.1	2260	cctgctcactcctcctcctctct	337939	707415	see also 5247 line
5250	HYPC	NM_012272.1	2293	cactgctcactcctcctcctct	337940	707416	see also 5247 line
5251	HYPC	NM_012272.1	2586	ctacacaaagcgcgaacactg	337942	707419	see also 5247 line
5252	HYPC	NM_012272.1	2751	tctcactcctgctcctggaag	337943	707421	see also 5247 line
5253	ITGB1BP2	NM_012278.1	153	tgtctcgcgaacgactcttga	131891	704870	signal_transduction
5254	JAZ	NM_012279.2	347	agagatactcactcactcctg	48456	472408	protein binding
5255	KCNQ2	NM_012281.2	2707	agactgcttgaactcactctt	132526	536452	apoptosis
5256	TRAM2	NM_012288.1	1158	ccacagcgcctcactcactcact	302804	747263	channel
5257	TLK1	NM_012290.3	471	tgcagcactcttgaactcactg	102664	516487	kinase, related,
5258	TLK1	NM_012290.3	1619	tgcagcactcttgaactcactg	102698	516487	cell cycle
5259	TLK1	NM_012290.3	1916	ccagcagcgcctcactcactg	102712	516547	see also 5257 line
5260	TLK1	NM_012290.3	1922	ggcagcagcactcactcactg	102713	516548	see also 5257 line
5261	TLK1	NM_012290.3	2310	tctctcagcactcactcactg	102723	516556	see also 5257 line
5262	GFR	NM_012294.1	145	tactctgactcctctcttctca	128296	664752	signal_transduction
5263	GFR	NM_012294.1	149	tctgactcctctctcttctca	128297	664753	see also 5262 line
5264	G3BP2	NM_012297.2	908	ctggaattcacccctctttaa	51883	473005	receptor signaling complex scaffold protein

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5265	G3BP2	NM_012297.2	1193	tgaactgcgcataccaaag	51953	472039	see also 5264 line	
5266	G3BP2	NM_012297.2	1422	caattccctccgaattctgg	51957	472047	see also 5264 line	
5267	FBXW1B	NM_012300.1	808	ccatttttgcacacacattg	228800	750217		
5268	FBXW1B	NM_012300.1	839	ccatttttgcacacacacaa	228801	750218	see also 5267 line	
5269	EPB41L3	NM_012207.2	1114	ccgtctgcctctccaaatgaa	117128	522084		structural molecule non-small-cell lung cancer(非小細胞肺癌)
5270	EPB41L3	NM_012207.2	1337	aaaggaacacattcttcattag	117142	522087	see also 5269 line	
5271	EPB41L3	NM_012207.2	1435	ctgtgcgcctctctctgagctc	117146	522093	see also 5269 line	
5272	KPNAB	NM_012310.3	110	atcgaagaagaagcttaagaa	289399	651454		
5273	KPNAB	NM_012310.3	1353	atgtgcctctgccttaagaa	289424	651454	see also 5272 line	
5274	LEI1	NM_012318.1	1205	aggaaatcaatgccttttccaaa	147306	549276	signal transduction	
5275	MAPKBP2	NM_012324.2	191	aggaaatcaatgcctgaattt	120656	525247	kinase, related, apoptosis	
5276	MAPKBP2	NM_012324.2	193	gaacttaagcttgcgaagaattg	120657	525248	see also 5275 line	
5277	MAPKBP2	NM_012324.2	1175	accttgcctgcgaactgtctcc	120660	525257	see also 5275 line	
5278	MAPKBP3	NM_012326.2	196	cttgcctgcgcatactgtctcc	120310	525103	microtubule binding	
5279	PIGN	NM_012327.3	828	ctgtaatactgcttttttgataa	338039	596150		
5280	MMD	NM_012328.1	180	caacacagcaatctcttcttcto	250020	617605	receptor activity	
5281	MMD	NM_012328.1	456	atctctatactgcctttattct	250026	617614	receptor	
5282	MMD	NM_012328.1	489	accttgcgaacacatttaagt	250027	617616	see also 5280 line	
5283	MYST4	NM_012330.1	953	tccaataatgactctcttttg	33257	482177	transcription_regulat	
5284	MYST4	NM_012330.1	1335	acctcaattgcacacagaaata	33264	482187	see also 5283 line	
5285	MYST4	NM_012330.1	1336	accttgcacacacagaaata	33265	482188	see also 5283 line	
5286	MYST4	NM_012330.1	1343	accagacagcaataaaatttaag	33266	482191	see also 5283 line	
5287	MYST4	NM_012330.1	1375	tgtctgttaacacgttcgaagg	33267	482194	see also 5283 line	
5288	MYST4	NM_012330.1	2533	cagatatacgaatctgtaccaaa	33269	482204	see also 5283 line	
5289	MYST4	NM_012330.1	2540	atgcagatatacgaactttacc	33301	482205	see also 5283 line	
5290	MYST4	NM_012330.1	2541	actgcagatatacgaactttacc	33302	482206	see also 5283 line	
5291	MYST4	NM_012330.1	5771	aaactatacacttacttaataca	33349	482247	see also 5283 line	
5292	MYST4	NM_012330.1	5784	aaactatacacttacttaataca	33352	482249	see also 5283 line	
5293	MYST4	NM_012330.1	5843	atgcacaaagcgtcttttctcc	33353	482251	see also 5283 line	
5294	MYO10	NM_012333.2	129	tgtgtactctttatgcagaacc	111921	669153	transcription co-activator	
5295	MYO10	NM_012334.1	2261	aggctcttccttaacaaagtataa	92564	509230	signal transduction motor	
5296	MYO10	NM_012334.1	5273	tgtgtcttcctgcagatgcgaata	92609	509281	see also 5295 line	
5297	NARF	NM_012336.2	488	gctcttggttgctgaactatttt	127828	723273		
5298	NARF	NM_012336.2	801	tggctctgtatataatagaag	327690	782252		
5299	TPBP4	NM_012341.1	339	atgcacaaagtcttcataagatta	109304	519583	GTP binding	
5300	TPBP4	NM_012341.1	340	tgcacaaatcttcataagatttt	109305	519584	see also 5299 line	
5301	TPBP4	NM_012341.1	640	tttttgcacaaagtcttcataag	109311	519589	see also 5299 line	
5302	NNT	NM_012343.2	2330	tgaaaattttgtgcacacaaag	231224	610430	electron	
5303	NNT	NM_012343.2	3123	ccaaatcccgctgcacttaattg	231377	610433	see also 5302 line	
5304	OSTF1	NM_012383.3	172	cggtcaccacccgcaggaatttaa	134462	540375	signal transduction	
5305	OSTF1	NM_012383.3	176	aaacagaggaactgaatgcttc	134463	540376	see also 5304 line	

5306	SPDEF	NM_012391.1	1333	ccctccatccatccgagatgataa	11879	448640	transcription_regulat or	molecular_function unknown
5307	SPDEF	NM_012391.1	1336	ccctccatccgagatccatgataa	11880	448641	see also 5306 line	—
5308	PEF	NM_012392.1	899	acccatccagctccatccatgac	150607	542983	—	—
5309	PFTK1	NM_012395.2	925	taactccaccacgctcatatct	96662	511830	kinase related	papsin A
5310	ARP-2	NM_012402.2	257	gtcagagccacacccatccatgaaa	108301	740618	signal transduction	protein binding
5311	PRKCAP2	NM_012407.1	366	ctctcatatgctccagctattgga	126303	529561	channel,	—
5312	PTPN22	NM_012411.2	376	acccatccagctcccttactcaaac	193598	587156	phosphatase	—
5313	PTPN22	NM_012411.2	669	ttccatctctagacacccattctt	193609	587166	see also 5312 line	—
5314	SEC22L2	NM_012430.2	330	ttccagagagagcttacttact	274134	747454	—	—
5315	SEC22L2	NM_012430.2	335	aaagaggtttttacttactaaa	274135	747456	see also 5314 line	—
5316	SEC22L2	NM_012430.2	421	gagagccacacagagatgataa	274139	747457	see also 5314 line	—
5317	SEC22L2	NM_012430.2	422	agccagccagagacagatgataa	274140	747458	see also 5314 line	—
5318	SEC22L2	NM_012430.2	424	gagccagccagagacagatgataa	274141	747459	see also 5314 line	—
5319	SEC22L2	NM_012430.2	773	tgctctccatccagctttact	274151	747472	see also 5314 line	—
5320	SEWAAE	NM_012431.1	1844	gtctgttagagatcacactttt	317282	604988	—	—
5321	SETDB1	NM_012432.1	2058	ttctgtttttgactccattt	33006	466799	—	—
5322	SETDB1	NM_012432.1	3576	accagagagctttctcttaact	33094	466834	see also 5321 line	—
5323	SETDB1	NM_012432.1	3577	cccgagagctttctcttaact	33095	466835	see also 5321 line	—
5324	SETDB1	NM_012432.1	3699	gagtcttctctactgttc	33102	466842	see also 5321 line	pre-mRNA splicing
5325	SF3B1	NM_012433.1	36	agacagcagctgagaaatcaag	46833	670305	—	factor
5326	SF3B1	NM_012433.1	361	aaagcagcagctgagaaatcaag	46849	670322	see also 5325 line	—
5327	SF3B1	NM_012433.1	387	ccacagagctctgctctctttt	46851	670323	see also 5325 line	—
5328	SF3B1	NM_012433.1	1834	acatagagcctctgctctgataa	46880	670370	see also 5325 line	—
5329	SF3B1	NM_012433.1	1984	caacagctgttttaagttgttca	46887	670376	see also 5326 line	—
5330	SF3B1	NM_012433.1	2141	agagcagcagctgtttttgttgc	46902	670380	see also 5326 line	—
5331	SF3B1	NM_012433.1	2397	tgctgtgtgagagcaactcttttca	46905	670390	see also 5325 line	—
5332	SF3B1	NM_012433.1	2783	tgctgtgtgagagcaactcttttca	46918	670409	see also 5325 line	—
5333	SF3B1	NM_012433.1	3126	tgctgtgtgagagagctgtaattg	46928	670419	see also 5325 line	—
5334	SSBP2	NM_012446.2	619	cccacctttagagctactcaatc	19888	714765	transcription_regulat or	—
5335	STAG3	NM_012447.1	2633	caagcagcagctttttcttatt	308054	674579	cell cycle	—
5336	STAI5B	NM_012448.2	1914	taccagagcagctgaattacacttc	12239	448971	transcription_regulat	translational
5337	STAI5B	NM_012448.2	1915	acagagcagctgaattacacttc	12240	448972	see also 5336 line	regulator
5338	TMM1.3	NM_012458.2	610	acaggagagagagcaactcttga	160027	556933	—	—
5339	TLL1	NM_012464.3	728	ctctctgtctctgtctctgtttgt	153928	554595	—	—
5340	TLL1	NM_012464.3	729	ctctctgtctctgtctctgtttgt	153929	554596	see also 5339 line	—
5341	TLL1	NM_012464.3	1585	ttctctctctgtctctgtttgtgt	153956	554616	see also 5339 line	—
5342	TLL1	NM_012464.3	1587	ctctctctctgtctctgtttgtgt	153957	554617	see also 5339 line	—
5343	TLL2	NM_012465.2	2229	aaagcagcagctgtctgtttgtac	154044	554681	—	—
5344	TLL2	NM_012465.2	2230	aaagcagcagctgtctgtttgtac	154045	554682	see also 5343 line	—

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5345	TRPC5	NM_012471.1	2329	aktctgacacgcacgtctgac	261701	645539	channel	store-operated calcium channel	-
5346	TRPC5	NM_012471.1	2351	cgagacacactctgcactcttc	261702	645540	see also 5345 line	-	-
5347	TRPC5	NM_012471.1	3806	atgcagacagacacacttgc	261879	645592	see also 5345 line	-	-
5348	TSLRP	NM_012472.3	84	atcagacaaactcttgcact	339239	709146	-	-	-
5349	USP21	NM_012472.3	1257	ctccagacactctgcacttttt	189181	583200	-	-	-
5350	USP21	NM_012472.3	1258	tccacacactctgcactttttg	189182	583205	see also 5349 line	-	-
5351	USP21	NM_012472.3	1258	ctccacactctgcactttttg	189183	583206	see also 5349 line	-	-
5352	USP21	NM_012472.3	1263	aktgcagactctgtttttgacac	189186	583207	see also 5349 line	-	-
5353	USP21	NM_012472.3	1397	aktgcagactctgtttttgacac	189189	583209	see also 5349 line	-	-
5354	WBP2	NM_012472.2	1418	ctgcagacacaaagactgttgc	189189	583209	see also 5349 line	-	-
5355	E46L	NM_013236.1	322	gcacgtgcacaaagactgttgc	338281	542289	-	-	-
5356	E46L	NM_013236.1	732	ttctctgttgatgaactcttct	279550	667669	-	-	-
5357	GLT3	NM_013242.1	636	acagcttgacacagactgttgc	320689	696677	see also 5355 line	-	-
5358	GLT3	NM_013242.1	712	cgagctgcacacagactgttgc	320689	696677	see also 5357 line	receptor activity,	-
5359	SCG3	NM_013243.2	1178	atgcttggaagagacactaa	338395	696633	signal transduction	-	-
5360	HGNT-IV-	NM_013244.2	1355	tggctcactgtgttaactctatc	212131	600569	-	-	-
5361	HGNT-IV-	NM_013244.2	1438	gtgtctggtcttgcacttttc	212136	600576	see also 5360 line	-	-
5362	H	NM_013244.2	1656	aacagagctcactgtactttga	212141	600585	see also 5360 line	-	-
5363	VPS4A	NM_013245.2	333	agccttgagagactttaccacag	107383	517538	-	-	-
5364	VPS4A	NM_013245.2	334	agcttgagagactttaccacag	107384	517539	see also 5363 line	-	-
5365	OLC	NM_013245.1	61	agagactctgttgagactgttc	168489	585448	signal transduction	-	-
5366	PRSS25	NM_013247.3	1355	cagctgcagagagctgtgtctgc	182570	575847	apoptosis	-	-
5367	PRSS25	NM_013247.3	1368	cagctgcagagagctgtgtctgc	182572	575848	see also 5366 line	-	-
5368	MLK1	NM_013255.2	112	tactctccgagagactgttaagt	338409	709070	-	-	-
5369	MLK1	NM_013255.2	401	tccctgtcgtgactgttaagata	338418	709085	see also 5368 line	-	-
5370	MLK1	NM_013255.2	725	atgcagctgttcttcactgtatct	338430	709099	see also 5368 line	-	-
5371	MLK1	NM_013255.2	729	tggctgttcttcactgtatctctc	338431	709101	see also 5368 line	-	-
5372	MLK1	NM_013255.2	733	tgttcttaactgtatctatctc	338432	709102	see also 5368 line	-	-
5373	MLK1	NM_013255.2	1211	cgagaaacactgtatctatctc	338457	709121	see also 5368 line	-	-
5374	MLK1	NM_013255.2	1922	ggcattctgaactctatctatcga	338475	709142	see also 5368 line	-	-
5375	MLK1	NM_013255.2	2158	ggcattctgaactctatctatcga	338481	709147	see also 5368 line	-	-
5376	SGKL	NM_013257.3	930	acacactgaaagctgttatgtt	100346	514855	kinase related	-	-
5377	SGKL	NM_013257.3	937	tgtccagagctgttctgaattgt	100356	514861	see also 5376 line	-	-
5378	PPARGC1	NM_013261.2	927	cccacagcttccactgtatgaga	36612	698438	transcription, regulat	-	-
5379	PPARGC1	NM_013261.2	1330	ctccagacactgtacacacataa	36622	698451	see also 5378 line	lipidophagy/リポソストロフィー	-
5380	PPARGC1	NM_013261.2	1849	tgtctgtctcactgtatctatc	36633	698463	see also 5378 line	-	-
5381	BRD7	NM_013263.1	523	aaccccacatgtttgtatctc	327355	704113	-	-	-
5382	DDX25	NM_013264.2	1137	agagagcttccactgtatctgag	30779	473564	-	-	-

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5383	SLC30A1	NM_013272.2	2180	ctgagcaacatgagttatttgc	274591	657330	-	-	-
5384	FLRT3	NM_013281.2	285	atctctctctatgggataaact	146200	548749	-	receptor signaling protein	-
5385	FLRT3	NM_013281.2	1135	tgtgatttggtgcaataaaca	146228	548795	-	see also 5384 line	-
5386	ITIG	NM_013285.1	1017	tgtggttcatttggtatcaaat	109383	757283	-	GTPase	-
5387	ITIG	NM_013285.1	1018	tgtgtttcaattggtatcaaatg	109384	757284	-	see also 5386 line	-
5388	TRA2A	NM_013293.2	924	gggaactctctctgtgttaaat	47370	811655	-	pre-mRNA splicing factor	-
5389	LGN	NM_013296.3	921	aacttcaggttggaacttatgac	297951	665162	-	signal transduction	-
5390	LGN	NM_013296.3	924	tctagagatgagctgacttatgctca	297952	665163	-	gpcr	-
5391	SLC30A4	NM_013300.3	326	gcgcgtggaagcgcctcaaatct	266400	653931	-	see also 5389 line	-
5392	SLC30A4	NM_013300.3	1181	tacgtcatcaatcatcaaatct	266420	653955	-	zinc ion	-
5393	SLC30A4	NM_013300.3	1182	agctcagcatcctatagatttca	266421	653956	-	see also 5391 line	-
5394	SLC30A4	NM_013300.3	1185	tccatcatcctatagatttcaagc	266422	653957	-	see also 5391 line	-
5395	BLNK	NM_013314.2	716	actctccatcctgagttatgatac	252563	680731	-	kinase related	-
5396	GNOT4	NM_013315.1	1043	actctccatcctgagttatgatac	58697	451967	-	-	-
5397	GNOT4	NM_013315.1	1213	actctccatcctgagttatgatac	58697	451965	-	see also 5396 line	-
5398	GNOT4	NM_013315.1	1454	ggttttgctttctctctctctctct	338715	784968	-	see also 5396 line	-
5399	ARCB	NM_013325.3	1071	aggctccgccaagtttgaac	338715	784968	-	-	-
5400	P50R2	NM_013325.2	683	caggctcgtctatgcttctcagg	223713	612887	-	transcription regulat	-
5401	C21orf86	NM_013325.2	1828	agcatcgtctcctcaaatatctaca	23446	452957	-	or	-
5402	GMPFB	NM_013334.2	829	gcacaaggagggagcaactatgac	209209	598682	-	-	-
5403	GMPFA	NM_013335.2	522	tacgctcgaatcgttgagatcgc	209198	747483	-	-	-
5404	ALG5	NM_013338.3	808	acgatggttcatttctgtatgaac	211344	600150	-	-	-
5405	SART2	NM_013352.1	2124	aggcagatcctctctctctcagg	323344	774903	-	-	-
5406	TMOD4	NM_013353.1	557	gttgctcaagcctgcacaagtataa	119723	524752	-	-	-
5407	TMOD4	NM_013353.1	558	tgtgtatcagctgcacaagtataag	119724	524753	-	see also 5406 line	-
5408	PADI1	NM_013355.1	1242	cttggtctcctgctttgtatgakt	149327	550884	-	protein-arginine deiminase	-
5409	PCOLCE2	NM_013363.2	1194	acgcacacatcgtatcatcaac	95940	739904	-	-	-
5410	ANAPC4	NM_013367.1	537	gggaagcctcgtgattttatgac	227521	714938	-	cell cycle	-
5411	ANAPC4	NM_013367.1	816	gtgtatgagctggaagaagaatc	227531	714953	-	see also 5410 line	-
5412	ANAPC4	NM_013367.1	1372	aaagctcagcagcctttatataag	227552	714967	-	see also 5410 line	-
5413	ABT1	NM_013375.2	433	gcagagccctctcgttatgctc	111413	657898	-	transcription regulat	-
5414	TRHE	NM_013381.1	1398	caacatggtctttgtctataga	180165	555497	-	signal transduction	-
5415	POMT2	NM_013382.3	1428	tctcgtatgagcaagaagaact	211969	769441	-	gpcr	-
5416	LASS2	NM_013384.3	515	gttgataaacctcgtttctatga	6024	445154	-	transcription regulat	-

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5417	LASS2	NM_013384.3	552	ggagagatattccatcaagac	6025	445158	see also 5416 line		
5418	LASS2	NM_013384.3	592	tgtatctatcttttaacttt	6028	445160	see also 5416 line		
5419	TMEM2	NM_013390.1	3010	ctctatctgcaagatgaacag	327931	743819	-	-	-
5420	TMEM2	NM_013390.1	3583	atctacagatattgaagatcca	327957	743838	see also 5419 line		
5421	DMGDH	NM_013391.2	274	tgcacagatattgaagatcca	214724	736017	-	oxidoreductase	-
5422	DMGDH	NM_013391.2	275	ggacacagatattgaagatcca	214755	736018	see also 5421 line		
5423	DMGDH	NM_013391.2	276	ggacacagatattgaagatcca	214778	736019	see also 5421 line		
5424	DMGDH	NM_013391.2	277	cagcagacatattgaagatcca	214778	736019	see also 5421 line		
5425	DMGDH	NM_013391.2	278	atcagatattgaagatcca	214777	736020	see also 5421 line		
5426	NRBP	NM_013392.1	354	gtctatctatctggcatgaaca	94898	510523	kinase related,		
5427	NRBP	NM_013392.1	498	tgtatagattctcaaatattgg	94992	510531	signal transduction	-	-
5428	NRBP	NM_013392.1	774	tgtctctgtcactatcaaat	94999	510537	see also 5425 line		
5429	NRBP	NM_013392.1	1239	aacagtttcaactttgtactct	95007	510548	see also 5425 line		
5429	USP25	NM_013392.2	946	tatgaagattgttttgaaataca	189204	583232	-	ubiquitin-specific protease	small cell lung cancer(肺がん)
5430	USP25	NM_013392.2	2080	tccagatctatctgaacattga	189238	583262	see also 5429 line		
5431	STRN4	NM_013403.1	386	ggcgaataatctctaaactgaag	122962	527514	signal transduction	-	-
5432	NCKAP1	NM_013436.2	861	taccatcatgaagctctcttcca	311619	692786	apoptosis	-	-
5433	NCKAP1	NM_013436.2	1152	ctctcttttggatgaagtgttcc	311629	692794	see also 5432 line		
5434	NCKAP1	NM_013436.2	2089	ggcgaacaaactctgaacttcca	311667	692822	see also 5432 line		
5435	NCKAP1	NM_013436.2	3118	aactgatattgaagtgttcaattga	311700	692864	see also 5432 line		
5436	NCKAP1	NM_013436.2	3128	aagtttcgaattgaattgttcaattga	311701	692865	see also 5432 line		
5437	NCKAP1	NM_013436.2	3613	tgtatctatctgtctcttcaaac	311719	692881	see also 5432 line		
5438	NCKAP1	NM_013436.2	3622	tgtctctctatcaaacagtgttga	311721	692882	see also 5432 line		
5439	SIT7	NM_013437.2	48	cttgtctgtgcacaaagattga	284506	719254	-	-	-
5440	SIT7	NM_013437.2	50	gtctgtgcacaaagattga	284506	719255	see also 5439 line		
5441	SIT7	NM_013437.2	975	tgtatgtatgttaaaattatctg	284541	719265	see also 5439 line		
5442	SIT7	NM_013437.2	2548	caatctacaaactgttgtttga	284578	719283	see also 5439 line		
5443	UBQLN1	NM_013438.2	492	cttgcacactgttgttaatt	338927	767187	-	-	-
5444	UBQLN1	NM_013438.2	1526	atgcgaatctctctctttgttc	338939	727270	see also 5443 line		
5445	UBQLN1	NM_013438.2	1529	ctgaatctctctctctttgttc	338940	727271	see also 5443 line		
5446	UBQLN2	NM_013444.2	1894	tgtgcccacacagatgattcttc	338967	707437	-	-	-
5447	BAT1A	NM_013446.2	3231	atgcacaaactgtgtgtcttttcc	22252	455851	transcription_regulat		
5448	BAT1A	NM_013446.2	3237	atctgtgtgtgtcttctactgt	22254	455852	or	-	-
5449	BAT2A	NM_013449.2	358	tgtctctatctatctatctcca	22306	455980	transcription_regulat	-	-
5450	LAMP2	NM_013995.1	1285	cttgtctttcaactgtcttatttc	323637	506422	or	-	-
5451	LAMP2	NM_013995.1	1292	tctcagttgtatctatctattag	323638	506424	see also 5450 line		diabetes(糖尿病)
5452	ZNF297B	NM_014007.1	1228	atgtgcagctctctctgtttcttc	45063	470786	-	-	-
5453	JM1	NM_014008.1	97	cggcagcagctctctctctcttc	339007	751896	-	-	-
5454	ASTN2	NM_014010.2	1135	agacccctgaagaattctctgaag	339027	708542	-	-	-
5455	ASTN2	NM_014010.2	3120	caactcaactctactatgaataa	339046	708566	see also 5454 line		

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5456	SACM1L	NM_014016.1	259	atccatcttgttgcagtgtaatta	339151	742326	-	-	-
5457	SACM1L	NM_014016.1	550	aggcagatccagcaggtttatg	339163	742346	see also 5456 line	-	-
5458	SACM1L	NM_014016.1	551	ggcagatccagcaggtttatg	339164	742347	see also 5456 line	-	-
5459	SACM1L	NM_014016.1	832	ccagctcagatccaaactctg	339169	742354	see also 5456 line	-	-
5460	MAPBPBP	NM_014017.1	251	aacgacagcaacgctttatga	323559	742668	-	-	-
5461	MAPBPBP	NM_014017.1	253	cggagacacacgctttatga	323570	742669	see also 5460 line	-	-
5462	KIAA0982	NM_014023.1	208	accctctatccagacaaac	339266	773769	-	-	-
5463	KIAA0982	NM_014023.1	798	tggctatccagctctctatct	339301	773792	see also 5462 line	-	-
5464	ASF1A	NM_014034.1	339	atctatgaagatccgctatctt	17842	771715	-	-	-
5465	ASF1A	NM_014034.1	341	atctatgaagatccgctatctt	17843	771716	see also 5464 line	-	-
5466	SNY24	NM_014035.1	489	atcgacacccgctgtctccaaat	270722	692001	protein transporter	-	-
5467	SNY24	NM_014035.1	493	atcgacacccgctgtctccaaat	270723	692003	see also 5466 line	-	-
5468	B2V02	NM_014036.1	490	actatcgatctctctctcaatg	56142	747678	-	-	-
5469	PTD012	NM_014036.1	384	tggatggcggcggatctcttt	339351	747850	-	-	-
5470	SPC12	NM_014041.1	287	tggatggatcaactctatggt	191689	584564	peptidase	-	-
5471	GMIH1	NM_014044.1	1755	tgatggatcaactctatggt	339409	721591	-	-	-
5472	GDV-1	NM_014055.2	1743	atgaagatctctgataatgctga	339438	685956	-	-	-
5473	GDV-1	NM_014055.2	2299	aggcaataggagacagctatcc	339460	685974	see also 5472 line	-	-
5474	OGN	NM_014057.2	836	acaggaagatctctcgcttaattc	169427	586128	-	-	-
5475	MCTS1	NM_014060.1	348	gaaccaattccaggtttgaacc	52483	474118	cell cycle	-	-
5476	MCTS1	NM_014060.1	736	aaggaattgcgtgaaatatac	52496	474127	see also 5475 line	-	-
5477	NCOA6	NM_014071.2	688	aggatattctctctcagctg	18644	450887	transcription_regulat	-	-
5478	NCOA6	NM_014071.2	1071	gaccaantgaacagcttaattt	18650	450894	see also 5477 line	-	-
5479	NCOA6	NM_014071.2	1848	tctctcccaagcagcttaacaaac	18655	450902	see also 5477 line	-	-
5480	NCOA6	NM_014071.2	1651	ccacaagcttaacacaaactcagc	18658	450903	see also 5477 line	-	-
5481	NCOA6	NM_014071.2	1883	gaccaagcctccaaactaaatg	18657	450905	see also 5477 line	-	-
5482	NCOA6	NM_014071.2	1747	tggatctcatgtttcaacag	18661	450908	see also 5477 line	-	-
5483	NCOA6	NM_014071.2	3224	aacgacacagctttatctctc	18693	450945	see also 5477 line	-	-
5484	NCOA6	NM_014071.2	4172	aggcaagcctcaaatctcttc	18712	450968	see also 5477 line	-	-
5485	NCOA6	NM_014071.2	4173	tggcagcctctcaactatctcc	18713	450969	see also 5477 line	-	-
5486	NCOA6	NM_014071.2	5181	tgccatctcagctttgctcaaca	18747	450991	see also 5477 line	-	-
5487	NCOA6	NM_014071.2	5421	tctctatctatccagctatcaaa	18752	450999	see also 5477 line	-	-
5488	NUPL1	NM_014089.2	549	cagcagctctccacagcttctc	339540	771332	-	-	-
5489	NUPL1	NM_014089.2	1137	cagctctctgactctctctcga	339558	771350	see also 5488 line	-	-
5490	NUPL1	NM_014089.2	1586	agcctctctgctctcagctttg	339574	771384	see also 5488 line	-	-
5491	NUPL1	NM_014089.2	1617	tgcatacagctgctctcagctt	339576	771365	see also 5488 line	-	-
5492	NUPL1	NM_014089.2	1624	atgctgctcagctttctcaaac	339577	771366	see also 5488 line	-	-
5493	NUPL1	NM_014089.2	1746	cagcgtttgcagctcaactaca	339579	771369	see also 5488 line	-	-
5494	PRO2000	NM_014109.2	3422	gagctttgctctctcccaatca	98117	488775	-	-	-
5495	PRO2000	NM_014109.2	3423	aggtttgctctctcccaatag	98118	488776	see also 5494 line	-	-
5496	TRPS1	NM_014112.1	1343	cccacacagatctctatgacct	13595	449681	transcription_regulat	-	-
5497	TRPS1	NM_014112.1	2085	cagatgatctatccgcaaaagttc	13924	449674	zinc binding	-	-
							trichochinopharyngeal syndrome (毛嚢腺腫部骨 症候群)		

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5498	TRPS1	NM_0141121	2296	tccataaattcaaatgctatcc	13633	449579	see also 5496 line		
5499	TRPS1	NM_0141121	2552	ttcccaagcatccgagctcaaac	13637	449687	see also 5496 line		
5500	TRPS1	NM_0141121	2553	tcccaagcatccgagctcaaac	13638	449688	see also 5496 line		
5501	TRPS1	NM_0141121	3367	atgcacatctggagctatgcttc	13647	449699	see also 5496 line		
5502	TRPS1	NM_0141121	3652	aagccaaatctggagctatgcttc	13656	449711	see also 5496 line		
5503	TRPS1	NM_0141121	3970	tgcgctctggagctatgcttc	13670	449722	see also 5496 line		
5504	TRPS1	NM_0141121	4001	tccggagatctgcctactctga	13671	449723	see also 5496 line		
5505	TRPS1	NM_0141121	4003	ctggagatctgcctactctga	13672	449724	see also 5496 line		
5506	TRPS1	NM_0141121	4062	gtccctatctccactctgaatc	13673	449728	see also 5496 line		
5507	TRPS1	NM_0141121	4064	scctctccactctgaatc	13674	449727	see also 5496 line		
5508	TRPS1	NM_0141121	4129	tgcgttgctgcctgaatccttc	13675	449729	see also 5496 line		
5509	TRPS1	NM_0141121	4395	cggcaaatatctgcctcaacaa	13683	449737	see also 5496 line		
5510	TRPS1	NM_0141121	4428	atggcctcatatggagcaatgc	13684	449738	see also 5496 line		
5511	SCN11A	NM_0141391	1303	tggctgcctatggaaatgcacga	262139	553821	channel		
5512	SCN11A	NM_0141391	4148	aagtttgctgcacagcaatttt	262192	553892	see also 5511 line		
phosphatase,									
transcription_regulat									
5513	SMARCA1	NM_0141402	2667	ccagctctcttaagccaatttt	40084	467432	or		
5514	HSPC055	NM_0141532	1331	aggcaaccaccctcaacaaatt	62813	480669			
5515	HSPC055	NM_0141532	1337	ccagctcttaagccaatttt	62814	480670	see also 5514 line		
5516	HSPC055	NM_0141532	1556	cagcctcttaagccaatttt	62821	480678	see also 5514 line		
5517	HSPC055	NM_0141532	2454	cagcctcttaagccaatttt	62851	480914	see also 5514 line		
5518	HSPC055	NM_0141532	2563	acgtctctctctgaatccttc	62852	480920	see also 5514 line		
5519	HSPC055	NM_0141541	156	agctatgcctgcctcctatgcttc	339603	735922			
5520	HSPC055	NM_0141541	159	tgcctatgcctgcctcctatgcttc	339604	735923	see also 5519 line		
5521	HSPC055	NM_0141541	169	ccatctatgcctgcctcctatgcttc	339605	735924	see also 5519 line		
5522	HSPC055	NM_0141541	1042	tacagctatgcctgcctcctatgcttc	352220	735962	see also 5519 line		
5523	HSPC055	NM_0141551	433	cagcagctatgcctgcctcctatgcttc	339693	531438			
5524	THY28	NM_0141742	962	atgctgctatgcctgcctcctatgcttc	339695	753467			
5525	HSPC150	NM_0141761	297	tccctgctgctgcctgcctcctatgcttc	229845	615103			
5526	HSPC150	NM_0141761	417	tgcctgctgcctgcctgcctcctatgcttc	229849	615108	see also 5525 line		
5527	HSPC159	NM_0141811	115	gtctgctgcctgcctgcctcctatgcttc	339922	784224			
5528	HSPC159	NM_0141811	123	ccagctgcctgcctgcctcctatgcttc	339924	784225	see also 5527 line		
5529	HSPC159	NM_0141811	125	ccagctgcctgcctgcctcctatgcttc	339925	784226	see also 5527 line		
5530	ORMDL2	NM_0141823	68	ctgctgcctgcctgcctcctatgcttc	339940	714703			
5531	DNCL2A	NM_0141832	299	tgcctgcctgcctgcctcctatgcttc	130771	720238			
5532	SCN8A	NM_0141911	1710	atccacagcaatgcctgcctcctatgcttc	100201	514468	channel		
5533	SCN8A	NM_0141911	2258	aagcaacatgcctgcctgcctcctatgcttc	100205	514473	see also 5532 line		
5534	SCN8A	NM_0141911	4036	ctcgcctgcctgcctgcctcctatgcttc	100224	514494	see also 5532 line		
5535	AP2A1	NM_0142032	354	aacctgcctgcctgcctgcctcctatgcttc	267547	650479			
5536	AP2A1	NM_0142032	355	agcctgcctgcctgcctgcctcctatgcttc	267548	650480	see also 5535 line		
transcription_regulat									
5537	HOXD9	NM_0142132	591	ccagctgcctgcctgcctgcctcctatgcttc	5256	444899	or		
5538	HOXD9	NM_0142132	593	tgctgcctgcctgcctgcctgcctcctatgcttc	5257	444900	see also 5537 line		

Schinke immunosuccous dysplasia(免疫不全性
骨異形成症 シムケ型)

motor endplate disease(運動終板病)

transcription_regulat RNA polymerase II
transcription factor

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5539	INSRR	NM_014215.1	2843	gctgtctccctcttgcctg	85915	504426	receptor activity, signal transduction	-	-
5540	ITPK1	NM_014216.2	845	accgagagtcacattcttcaac	219498	775986	kinase related,	-	-
5541	RAGE	NM_014226.1	450	ctcgttctctgacacatcgt	98878	513173	signal transduction	-	-
5542	RAGE	NM_014226.1	454	tcctcttgacatctatgctcc	98878	513174	see also 5541 line	-	-
5543	RAGE	NM_014226.1	459	tgcacatctatgacactatg	98879	513175	see also 5541 line	-	-
5544	RAGE	NM_014226.1	469	atgagacattatgacactatga	98880	513177	see also 5541 line	-	-
5545	RAGE	NM_014226.1	471	gtgacattctgacatctatatt	98881	513178	see also 5541 line	-	-
5546	RAGE	NM_014226.1	670	ctgcggcgtctctatccaagc	98887	513184	see also 5541 line	-	-
5547	SLC6A11	NM_014229.1	1507	tggaaacaaccgtctctatgata	255925	639910	betaine/GABA sodi um symporter	-	-
5548	SRP68	NM_014230.2	170	ggccggatcgaggaacaacaag	54887	759511	signal recognition	-	-
5549	SRP68	NM_014230.2	171	gcggctatgaggaacaacaaga	54888	759512	particle receptor	-	-
5550	UBTF	NM_014233.1	416	tcgctgcctcggaactgttaac	43206	470144	transcription regulat or	-	-
5551	HSD17B8	NM_014234.3	617	tcctcccaagatcttcaaca	219899	704451	estradiol 17 beta- dehydrogenase	-	-
5552	PTPLA	NM_014241.2	578	ctctcatctcttctacacctc	195407	586885	-	-	-
5553	ADAMTS2	NM_014244.1	3186	ctgcgaagtcgacaactcaatat	184174	576364	-	-	-
5554	CELSR1	NM_014246.1	6132	caacgtctgcgtctgaagctatct	140532	546089	gpcr	-	-
5555	CELSR1	NM_014246.1	6721	atcgctacccccaactgatctc	140533	546075	receptor activity, signal transduction	-	-
5556	SLC28A13	NM_014251.1	312	tcctattctacaggatctcagat	153035	553953	see also 5554 line	-	-
5557	SLC28A13	NM_014251.1	940	aatttgatcatctgtttcaatta	153046	553962	carrier	-	-
5558	SLC28A13	NM_014251.1	1173	gtgtctcatctgctctctgaae	153050	553965	see also 5556 line	-	-
5559	ODZ1	NM_014253.1	1315	ctgcgtttctccagctctatcc	177729	576518	see also 5558 line	-	-
5560	ODZ1	NM_014253.1	1541	gagacagattctatagctatat	177737	576523	see also 5559 line	-	-
5561	ODZ1	NM_014253.1	1546	agtttctatagctatgatgctc	177738	576525	see also 5559 line	-	-
5562	ODZ1	NM_014253.1	2207	gctcttgaggacaactcttga	177753	576540	see also 5559 line	-	-
5563	ODZ1	NM_014253.1	2306	gaagcgcgcctgcacacttgc	177755	576541	see also 5559 line	-	-
5564	ODZ1	NM_014253.1	3827	cagcacaacaacaacaactctt	177782	576575	see also 5559 line	-	-
5565	ODZ1	NM_014253.1	4635	accaagccacctgaactgacag	177815	576601	see also 5559 line	-	-
5566	ODZ1	NM_014253.1	4739	tgtatacaactgaactcttttta	177820	576609	see also 5559 line	-	-
5567	ODZ1	NM_014253.1	5708	tggagctatctactctatgaaaa	177858	576643	see also 5559 line	-	-
5568	ODZ1	NM_014253.1	5710	gagctatcaactctgaaactat	177859	576644	see also 5559 line	-	-
5569	ODZ1	NM_014253.1	7817	ctactctatctgactctacacag	177919	576721	see also 5559 line	-	-
5570	YME1L1	NM_014263.2	366	aggagcacttgatctcgaact	107713	517760	see also 5559 line	-	-
5571	STR18	NM_014364.2	345	atgducagagactcaaacctgc	101478	702415	kinase related,	-	-
5572	STR18	NM_014264.2	2287	ctcccaaacactcttttttaca	101531	702463	cell cycle	-	-
							see also 5571 line	-	-

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5573	MAPRE2	NM_014268.1	136	gtcccaaatgctgaacacaa	20288	525083	signal transduction	-	-
5574	MAPRE2	NM_014268.1	242	atagcctcaaatgctctctac	120280	525090	see also 5573 line	-	-
5575	MAPRE2	NM_014268.1	243	tggcgtcaaatgctctctac	120291	525091	see also 5573 line	-	-
5576	MAPT4B	NM_014275.2	768	gacacaaacacacccctcttact	210492	600789	-	-	-
5577	APG-1	NM_014275.2	382	aagacacacacacccctcttact	72218	510934	-	-	heat shock protein
5578	APG-1	NM_014275.2	438	aagcttcaagcctctcttact	72224	510935	see also 5577 line	-	-
5579	APG-1	NM_014275.2	966	agcctctctctctctctctct	72237	510943	see also 5577 line	-	-
5580	APG-1	NM_014275.2	1198	caggtctctctctctctctct	72245	510951	see also 5577 line	-	-
5581	APG-1	NM_014275.2	1199	caggtctctctctctctctct	72246	510952	see also 5577 line	-	-
5582	APG-1	NM_014275.2	1559	aagaagacacacctctctctct	72257	510959	see also 5577 line	-	-
5583	APG-1	NM_014275.2	1562	aagaagacacacctctctctct	72258	510960	see also 5577 line	-	-
5584	APG-1	NM_014275.2	1578	tagaagcctctctctctctct	72259	510961	see also 5577 line	-	-
5585	OLFM1	NM_014275.2	792	aagcgaatctctctctctct	319967	685418	receptor activity	-	-
5586	OLFM1	NM_014275.2	842	aagcgcctctctctctctct	319968	685417	see also 5585 line	-	-
5587	OLFM1	NM_014275.2	843	agccgcctctctctctctct	319969	685418	see also 5585 line	-	-
5588	OLFM1	NM_014275.2	844	ggccgcctctctctctctct	319970	685419	see also 5585 line	-	-
5589	SIATBP1	NM_014281.3	1856	accagagcctctctctctct	66153	478763	-	-	-
5590	G1orf9	NM_014283.2	1251	tgcacacacacacacacacac	340058	776854	-	-	-
5591	G1orf9	NM_014283.2	3130	cagatctctctctctctctct	340101	776809	see also 5590 line	-	-
5592	RBP4	NM_014285.4	851	aacacgcacacacacacacac	49472	475438	-	-	7S RNA binding
5593	FREQ	NM_014286.2	525	aagagctctctctctctctct	148515	708998	-	-	calcium-dependent
5594	CAPN6	NM_014295.2	1923	cccaaatctctctctctctct	187673	581429	-	-	protein kinase
5595	CAPN6	NM_014295.2	1974	cagctctctctctctctctct	187674	581430	see also 5594 line	-	-
5596	CAPN6	NM_014295.2	1995	gtctctctctctctctctct	187675	581434	see also 5594 line	-	-
5597	BP	NM_014290.1	964	agcatabcaatgctctctctct	64826	479997	-	-	-
5598	BP	NM_014290.1	969	aacaaatgctctctctctctct	64827	479998	see also 5597 line	-	-
5599	BP	NM_014290.1	1341	tctctctctctctctctctct	64837	480007	transcription regulat	-	-
5600	OBX6	NM_014292.2	121	aggggtctctctctctctctct	17924	638738	or	-	-
5601	TRAM1	NM_014294.3	428	tactctctctctctctctctct	302534	732922	receptor activity	-	-
5602	TRAM1	NM_014294.3	431	atgctctctctctctctctct	302535	732923	see also 5601 line	-	-
5603	CAPN7	NM_014296.1	1053	accacacacacacacacacac	187688	581461	-	-	-
5604	CAPN7	NM_014296.1	1091	tacacacacacacacacacac	187702	581462	see also 5603 line	-	-
5605	CAPN7	NM_014296.1	1092	agcatabcaatgctctctctct	187703	581463	see also 5603 line	-	-
5606	CAPN7	NM_014296.1	2296	tctctctctctctctctctct	187744	581501	see also 5603 line	-	-
5607	BRD4	NM_014298.1	430	gtctctctctctctctctct	324010	710459	-	-	-
5608	BRD4	NM_014298.1	556	aagcctctctctctctctct	324014	710462	see also 5607 line	-	-
5609	BRD4	NM_014298.1	557	tgcctctctctctctctctct	324015	710463	see also 5607 line	-	-

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5646	MGC29815	NM_014398.2	919	hctaccaggaactctctacc	340490	756280	-	-	-
5647	MGC29815	NM_014398.2	1333	cagatttgagctgaactctt	340498	756291	-	-	-
5648	MGC29815	NM_014398.2	1334	agatttgagctgaactctt	340500	756292	see also 5646 line	-	-
5649	PELPI	NM_014398.1	2827	ctatctctctctctctctct	324837	738184	-	-	-
5650	SDN1	NM_014390.1	477	ctttcttcagcaagaacacag	56167	481320	-	-	-
5651	SDN1	NM_014390.1	1148	aaagacagcagcagagatctcag	56184	481330	see also 5650 line	-	-
5652	SDN1	NM_014390.1	1161	agagatctgagagatctctcag	56185	481333	see also 5650 line	-	-
5653	SDN1	NM_014390.1	1637	caagcagcagcagcagctctcag	56197	481339	see also 5650 line	-	-
5654	ANKR01	NM_014391.2	1030	gaatgcacagcagctctcagctc	21374	525795	signal transduction	-	-
5655	ANKR01	NM_014391.2	399	aggcttgctccacagagctctcag	323545	607923	signal transduction	-	-
5656	DA5234E	NM_014392.2	400	gggttgctccagcagagctctcag	323546	607924	see also 5655 line	-	-
5657	STAU2	NM_014393.1	1632	caactgaagcagagctctcagaa	48616	472205	-	-	-
5658	DAPP1	NM_014395.1	82	atgagcagcagcagctctcaga	172844	596976	phosphatase	-	-
5659	DAPP1	NM_014395.1	676	cagatctccacagacacactctc	172851	596988	see also 5658 line	-	-
5660	DAPP1	NM_014395.1	696	tcgactctcagcagctctcagaa	172852	596989	see also 5658 line	-	-
5661	VPS41	NM_014396.2	117	agatataaagactctctccctcag	272883	771728	-	-	-
5662	VPS41	NM_014396.2	659	agactctctgcccagcagctctc	272896	771738	see also 5661 line	-	-
5663	CAONG4	NM_014405.2	475	atcggtctatctctctcactctt	261602	645063	voltage-gated calcium channel	-	-
5664	TAFL	NM_014408.2	1342	gaactaccctctcagagataag	12654	749377	transcription_regulat	-	-
5665	TAFL	NM_014408.2	1377	cagatttgagctctctcactctt	12658	749379	or	-	-
5666	SIP	NM_014412.1	728	atgataagaagcagacacttaat	340556	699019	see also 5664 line	-	-
5667	AF5Q31	NM_014423.1	1515	atggagaaagcagctctctcag	727	744315	transcription_regulat	-	-
5668	AF5Q31	NM_014423.1	1567	ctctgacactctcaccctctata	730	744318	or	-	-
5669	AF5Q31	NM_014423.1	3362	ctgactctcagctctctcactct	760	744351	see also 5667 line	-	-
5670	AF5Q31	NM_014423.1	3732	gcctctctctctctctctctcagc	764	744356	see also 5667 line	-	-
5671	IRVS	NM_014425.2	353	tggagaaacacccactctctctct	340578	701231	-	-	-
5672	IRVS	NM_014425.2	1320	gttagcacacttgagctctctctct	340609	701243	see also 5671 line	-	-
5673	SNX5	NM_014426.2	275	ttctgttcaaaagc-aacatgaag	270843	652558	-	-	-
5674	SNX5	NM_014426.2	589	atgatacagatctctctctctcag	270850	652571	see also 5673 line	-	-
5675	MORC	NM_014428.1	1160	tggatgtctctctctcagctata	91740	508551	-	-	-
5676	79p	NM_014444.2	639	tcctctctgctgtgtctctgtag	286166	675643	structural constituent of cytoskeleton	-	-
5677	79p	NM_014444.2	1292	tggatcagctgaagatcactaa	286183	675660	see also 5676 line	-	-
5678	79p	NM_014444.2	1865	agctgtctctcagcagctctct	286192	675670	see also 5676 line	-	-
5679	ZNF364	NM_014455.1	292	gcccaaacctcaggaatataat	340675	724764	-	-	-
5680	ZNF364	NM_014455.1	293	gcccaaacctcaggaatataat	340676	724765	see also 5679 line	-	-
5681	ZNF364	NM_014455.1	294	gcccaaacctcaggaatataat	340677	724766	see also 5679 line	-	-
5682	ZNF364	NM_014455.1	1096	taataacagcagctctctctcag	340696	724784	see also 5679 line	-	-
5683	PDCD4	NM_014456.3	621	acctgaagagctctctctctcag	340704	619607	apoptosis	-	-
5684	PDCD4	NM_014456.3	1018	cagtttggtggcagctctctctc	340716	619617	see also 5683 line	-	-

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5685	POCD4	NM.0144563.1	1022	tgatgacacaaattctctctaga	340717	619618	see also 5683 line	-	-
5686	AB06190	NM.0144563.1	665	agaaacaaatgagctcttact	128441	457892	-	-	-
5687	AB06190	NM.0144563.1	890	caggcatctggctctctctga	128443	457893	see also 5686 line	-	-
5688	AB06190	NM.0144563.1	745	cagacatctccaccacacacac	128445	457894	see also 5686 line	-	-
5689	AB06190	NM.0144563.1	1036	tgtgtatgagctcacaacacac	128457	457907	see also 5686 line	-	-
5690	ONTN6	NM.014461.2	1934	gaagatctgtgtggtgtgtg	71341	498635	-	-	-
5691	ONTN6	NM.014461.2	1943	tgtgagctgtgtgtgtgtgtgt	71342	498637	see also 5690 line	-	-
5692	ONTN6	NM.014461.2	2916	sejcccccacacagcaacatg	71373	498668	see also 5690 line	-	-
5693	ONTN6	NM.014461.2	2917	agccaacacacacaaacttgc	71374	498669	see also 5690 line	-	-
5694	LSM3	NM.014463.1	106	atagcgaatttatggaatg	46336	471255	-	pre-mRNA splicing factor	-
5695	LSM3	NM.014463.1	109	agcgattatgtggaactgaga	46337	471256	see also 5694 line	-	-
5696	TINAG	NM.014464.1	913	cgcattctaccacctttcaag	19117	592768	-	-	-
5697	TEK72	NM.014466.2	360	tggacaagtctgcagagatta	292428	662220	-	-	-
5698	SRPUL	NM.014467.1	928	tggagcagacgtgtgtgtgtg	304282	671835	-	-	-
5699	HSAG761	NM.014473.1	945	ggccgtctccatgacatagatg	213869	603916	-	-	-
5700	ADAMDEC	NM.014479.2	340	tggagcagacatcactcgaaca	155149	556200	signal transduction	-	-
5701	RBMS3	NM.014483.1	306	cagcaggaacacattgataaaa	54115	472932	-	-	-
5702	RBMS3	NM.014483.1	1253	tccctccacacactttctatt	54139	472952	see also 5701 line	-	-
5703	RBMS3	NM.014483.1	1257	tggcagctgtctctattgaag	54141	472953	see also 5701 line	-	-
5704	RAB30	NM.014488.3	377	gaagcacaattggaattgatttt	110121	518269	signal transduction	RAB small monomeric	-
5705	RAB30	NM.014488.3	406	agcaagctgagaaattatgtga	110123	518271	see also 5704 line	-	-
5706	RAB30	NM.014488.3	841	atcagctatttggctctgtgaa	110132	518281	see also 5704 line	-	-
5707	FOX2	NM.014491.1	548	aacaactccagaggtttacaag	4223	444203	transcription regulat	-	-
5708	FOX2	NM.014491.1	1570	ggcctatcgaggcgcctctaga	4237	444214	see also 5707 line	-	-
5709	FOX2	NM.014491.1	1580	ggcagacttcggcgaactaacac	4238	444216	see also 5707 line	-	-
5710	FOX2	NM.014491.1	1747	tgttttccagcagcaatttctta	4241	444227	see also 5707 line	-	-
5711	TNR06	NM.014494.1	3742	aattgctctctcactactctcc	66892	486925	-	-	-
5712	TNR06	NM.014494.1	3887	ctcccgctacacagctgttag	66893	486927	see also 5711 line	-	-
5713	TNR06	NM.014494.1	4311	agcaacntgtgtctttcttag	66902	486935	see also 5711 line	-	-
5714	TNR06	NM.014494.1	4542	ttcacctctgagctgtctataaa	66908	486940	see also 5711 line	-	-
5715	TNR06	NM.014494.1	4544	caactctgcagctgtctataaaa	66909	486941	see also 5711 line	-	-
5716	TNR06	NM.014494.1	4641	caactcgcctctcaactctgac	66912	486944	see also 5711 line	-	-
5717	TNR06	NM.014494.1	4759	ctctgtgtctgaactcaaacacc	66913	486945	see also 5711 line	-	-
5718	TNR06	NM.014494.1	4875	ccctctctcaacttggaacttc	66915	486950	see also 5711 line	-	-
5719	TNR06	NM.014494.1	4878	tattctctgtgtgtattctctcc	66916	486951	see also 5711 line	-	-
5720	RP58K46	NM.014496.1	697	tgtgtgaattagagctctataaa	98906	514338	kinase related	protein serine/threonine kinase	-
5721	NP220	NM.014497.2	519	atgaattctgagtaactcaaca	20094	474318	signal transduction	-	-
5722	NP220	NM.014497.2	864	ggcagatcactcaattactctc	20104	474336	see also 5721 line	-	-

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5723	NP2220	NM_014497.2	865	lccgatacctaattactct	20105	474337	see also 5721 line
5724	NP2220	NM_014497.2	866	atccactcaatgaatattct	20109	474341	see also 5721 line
5725	NP2220	NM_014497.2	867	tcacattcaatgaatattct	20110	474342	see also 5721 line
5726	NP2220	NM_014497.2	868	ctgtttcaatgaatattct	20133	474355	see also 5721 line
5727	NP2220	NM_014497.2	869	ctgtttcaatgaatattct	20258	474458	see also 5721 line
5728	GOLPH4	NM_014498.2	2289	ctgtttcaatgaatattct	323538	766327	-
5729	CNO72	NM_014515.1	371	ctgtttcaatgaatattct	275364	723279	-
5730	CNO72	NM_014515.1	389	ctgtttcaatgaatattct	275366	723281	see also 5729 line
5731	CNO72	NM_014515.1	437	ctgtttcaatgaatattct	275367	723282	see also 5729 line
5732	CNO72	NM_014515.1	587	ctgtttcaatgaatattct	275369	723283	see also 5729 line
5733	CNO72	NM_014515.1	588	ctgtttcaatgaatattct	275370	723288	see also 5729 line
5734	CNO72	NM_014515.1	614	ctgtttcaatgaatattct	275371	723289	see also 5729 line
5735	CNO72	NM_014515.1	620	ctgtttcaatgaatattct	275373	723290	see also 5729 line
5736	CNO72	NM_014515.1	622	ctgtttcaatgaatattct	275374	723291	see also 5729 line
5737	CNO72	NM_014515.1	654	ctgtttcaatgaatattct	275375	723292	see also 5729 line
5738	CNO72	NM_014515.1	658	ctgtttcaatgaatattct	275376	723293	see also 5729 line
5739	CNO72	NM_014515.1	725	ctgtttcaatgaatattct	275380	723295	see also 5729 line
5740	CNO72	NM_014515.1	1065	ctgtttcaatgaatattct	275393	732415	see also 5729 line
5741	CNO72	NM_014515.1	1159	ctgtttcaatgaatattct	275397	732418	see also 5729 line
5742	CNO72	NM_014515.1	1160	ctgtttcaatgaatattct	275398	732419	see also 5729 line
5743	CNO72	NM_014515.1	1163	ctgtttcaatgaatattct	275399	732420	see also 5729 line
5744	CNO72	NM_014515.1	1188	ctgtttcaatgaatattct	275402	732423	see also 5729 line
5745	CNO73	NM_014516.1	1845	ctgtttcaatgaatattct	340813	760977	transcription_regulat
5746	CNO73	NM_014516.1	3757	ctgtttcaatgaatattct	340826	761000	see also 5745 line
5747	CNO73	NM_014516.1	3764	ctgtttcaatgaatattct	340829	761002	see also 5745 line
5748	UBP1	NM_014517.2	1764	ctgtttcaatgaatattct	13851	704790	transcription_regulat
5749	UBP1	NM_014517.2	1767	ctgtttcaatgaatattct	13852	704791	or
5750	TMOD2	NM_014546.2	222	ctgtttcaatgaatattct	119871	524703	see also 5748 line
5751	TMOD2	NM_014546.2	777	ctgtttcaatgaatattct	119887	524709	see also 5750 line
5752	CARD10	NM_014550.2	2109	ctgtttcaatgaatattct	129594	533190	apoptosis, complex scaffold
5753	CARD10	NM_014550.2	2258	ctgtttcaatgaatattct	129595	533192	kinase related protein
5754	OTX1	NM_014562.2	1281	ctgtttcaatgaatattct	8787	447527	see also 5752 line
5755	GALNT5	NM_014568.1	2373	ctgtttcaatgaatattct	211708	664228	transcription_factor
5756	ARFGAP3	NM_014570.3	172	ctgtttcaatgaatattct	21519	454984	or
5757	STRN3	NM_014574.2	553	ctgtttcaatgaatattct	122933	527431	transcription_factor
5758	STRN3	NM_014574.2	1187	ctgtttcaatgaatattct	122939	527462	cell cycle
5759	STRN3	NM_014574.2	1278	ctgtttcaatgaatattct	122914	527463	see also 5757 line
5760	STRN3	NM_014574.2	1282	ctgtttcaatgaatattct	122915	527464	see also 5757 line

Alzheimer disease(アルツハイマー病)

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5761	STRN3	NM_014574.2	1555	dgcattactgactgattactaa	128928	527476	see also 5767 line	-	-
5762	SCHP1	NM_014575.1	1243	aagctccgcgcgcgattctt	284108	705140	-	molecular function	unknown
5763	LUCD1	NM_014583.2	328	ttgccttcgactcgaagatc	281347	753876	-	-	-
5764	HEO1L	NM_014584.1	405	ggctttccacgaagctcaaaata	143300	705919	-	-	-
5765	SLC40A1	NM_014595.3	830	atccctgatactcattgtcga	181285	574465	-	-	hemochromatosis(ヘモクロマトーシス)
5766	CGBP	NM_014593.1	872	cccggaattcgttcacgaacttc	21009	736581	-	zinc binding	-
5767	CGBP	NM_014593.1	873	ccgggaattcgttcacgaacttc	21010	736582	see also 5766 line	-	-
5768	MAGED2	NM_014599.4	1061	tttgaagagagagcgtctcttg	340980	742401	-	-	-
5769	HERC3	NM_014606.1	1591	ctccatgcttgcagaagatttt	229761	735449	-	-	-
5770	HERC3	NM_014606.1	2203	tgagcccaactccgaagatgct	229785	735477	see also 5769 line	-	-
5771	HERC3	NM_014606.1	2514	tagccacaaactggttcaactg	229789	735484	see also 5769 line	-	-
5772	CYFIP1	NM_014608.1	624	ccpctcagttttacgttaaatg	341031	702124	-	-	-
5773	CYFIP1	NM_014608.1	1771	aagttgttcgaagaacatttga	341055	702144	see also 5772 line	-	-
5774	CYFIP1	NM_014608.1	1850	ttcttctacactcacttcataa	341057	702148	see also 5772 line	-	-
5775	CYFIP1	NM_014608.1	1853	ttcttctacactcacttcataa	341058	702149	see also 5772 line	-	-
5776	CYFIP1	NM_014608.1	3675	ttcttctacactcacttcataa	341087	702192	see also 5772 line	-	-
5777	G2AN	NM_014610.3	128	ctgcgaatgcagatctcaat	202784	535424	-	-	-
5778	G2AN	NM_014610.3	632	ctgcgaatgcagatctcaat	202788	535439	see also 5777 line	-	-
5779	MDN1	NM_014611.1	1671	ggatctatgcagagactcttc	305448	748883	-	-	-
5780	MDN1	NM_014611.1	1672	ttctatctctctgcacataaa	305449	748884	see also 5779 line	-	-
5781	ETEA	NM_014613.1	257	caagagatcctcagatctgtg	341149	801440	see also 5781 line	-	-
5782	ETEA	NM_014613.1	333	ttccatctccggttaccatttca	341150	801441	see also 5781 line	-	-
5783	ETEA	NM_014613.1	334	ttccatctccggttaccatttca	341151	801442	see also 5781 line	-	-
5784	ETEA	NM_014613.1	346	taactttacagagatcttata	341152	801443	see also 5781 line	-	-
5785	ETEA	NM_014613.1	347	taactttacagagatcttata	341153	801444	see also 5781 line	-	-
5786	ETEA	NM_014613.1	502	aagcttcacagcagcacttaag	341156	801445	see also 5781 line	-	-
5787	ETEA	NM_014613.1	506	tacagccagcacttaacagctc	341157	801446	see also 5781 line	-	-
5788	ETEA	NM_014613.1	773	cggttcagagcagcattcaacc	341161	801459	see also 5781 line	-	-
5789	DBO1	NM_014618.1	564	aacacttcagcagctcactctc	341337	709725	cell cycle	-	-
5790	DBO1	NM_014618.1	607	agagctttcacacagatataaa	341339	709727	see also 5789 line	-	-
5791	DBO1	NM_014618.1	607	agagctttcacacagatataaa	341340	709728	see also 5789 line	-	-
5792	DBO1	NM_014618.1	703	ccctcttcgcagcagatttcaaa	341341	709729	see also 5789 line	-	-
5793	DBO1	NM_014618.1	705	ccctcttcgcagcagatttcaaa	341343	709730	see also 5789 line	-	-
5794	GRK4	NM_014619.2	1071	aggtttacgcagcacttgaat	244561	632423	signal transduction	-	-
5795	GRK4	NM_014619.2	1073	gtcttcacgcagcacttgaat	244562	632424	see also 5794 line	-	-
5796	NPHS2	NM_014625.1	457	tgatgaaagctgaattatttt	314621	538321	-	-	-
5797	NPHS2	NM_014625.1	749	caactcgtctccactgaattt	314626	538328	see also 5796 line	-	-
5798	KIAA0211	NM_014630.1	2267	ccctctcttcgcagcacttcagc	29414	803171	-	-	-
5799	KIAA0211	NM_014630.1	2267	ccctctcttcgcagcacttcagc	29414	803171	-	-	-

bladder transitional cell carcinoma(膀胱移行上皮癌), bladder cancer(膀胱癌)

receptor activity, channel,

potassium channel

signal transduction

see also 5794 line

nephrotic syndrome(ネフローゼ症候群)

see also 5796 line

DNA binding

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5799	MICAL2	NM_014632.1	559	ttgcgaactgccttgaaatttc	221998	608530	-	-	-
5800	MICAL2	NM_014632.1	560	ttgcgaactgccttgaaatttc	222028	608557	see also 5799 line	-	-
5801	SH2BP1	NM_014633.1	200	ccacgaactgcacagagatttc	341452	528911	-	-	-
5802	SH2BP1	NM_014633.1	802	ctcttgagactgcacagatttc	341479	528933	see also 5801 line	-	-
5803	SH2BP1	NM_014633.1	860	tcttcagagactgcacagatttc	341481	528936	see also 5801 line	-	-
5804	SH2BP1	NM_014633.1	861	tcttcagagactgcacagatttc	341482	528948	see also 5801 line	-	-
5805	SH2BP1	NM_014633.1	1121	ttgcatttcgaactgcacagatttc	341496	528952	see also 5801 line	-	-
5806	SH2BP1	NM_014633.1	1290	taagagagctgcacagacagatttc	341525	528970	see also 5801 line	-	-
5807	SH2BP1	NM_014633.1	2178	caagcgccttcagatttcgaa	341526	528971	see also 5801 line	-	-
5808	SH2BP1	NM_014633.1	2178	agctacattctctctgaagatttc	341537	528975	see also 5801 line	-	-
5809	SH2BP1	NM_014633.1	2378	accctgagaccagatttccttc	296489	664472	-	-	-
5810	RALGPS1	NM_014636.1	1775	accctgagaccagatttccttc	296490	664473	see also 5810 line	-	-
5811	RALGPS1	NM_014636.1	1778	cccagagaccagatttccttc	296499	664477	see also 5810 line	-	-
5812	RALGPS1	NM_014636.1	1910	agttcatttcacaaacttccttc	296499	664477	see also 5810 line	-	-
5813	CHPPR	NM_014637.2	222	gtctcgaattctctgaagaa	341568	722199	-	-	-
5814	CHPPR	NM_014637.2	224	ctcgaattctctctgaagaa	341569	722200	see also 5813 line	-	-
5815	KIA0022	NM_014643.1	1335	gtccgagaccctttcaaac	29437	808153	-	-	-
5816	KIA0022	NM_014643.1	2895	accctcagaccctctgaagaa	29448	808170	see also 5815 line	-	-
5817	KIA0022	NM_014643.1	2896	accctcagaccctctgaagaa	29449	808171	see also 5815 line	-	-
5818	KIA0022	NM_014643.1	2897	ccctcagaccctctgaagaa	29450	808172	see also 5815 line	-	-
5819	KIA0035	NM_014645.1	1988	ccctcagaccctctgaagaa	341658	815632	-	-	-
5820	KIA0035	NM_014645.1	2000	ccctcagaccctctgaagaa	341659	815633	see also 5819 line	-	-
5821	LXAP	NM_014647.1	421	agcagccctctctgaagaa	63309	770339	-	-	-
5822	LXAP	NM_014647.1	426	tccactctctctgaagaa	63311	770339	see also 5821 line	-	-
5823	LXAP	NM_014647.1	1536	ttgcgaactgccttgaaatttc	63336	770351	see also 5821 line	-	-
5824	IPOT3	NM_014652.1	2324	ttgcgaactgccttgaaatttc	269252	651249	-	-	-
5825	IPOT3	NM_014652.1	3019	ctcgcgaactgccttgaaatttc	269260	651259	see also 5824 line	-	-
5826	KIA00406	NM_014657.1	1768	agcagcctgccttgaaatttc	341842	738559	-	-	-
5827	KIA00406	NM_014657.1	3206	agcagcctgccttgaaatttc	341874	738593	see also 5826 line	-	-
5828	KIA00406	NM_014657.1	3258	ttcgaaccctgccttgaaatttc	341877	738595	see also 5826 line	-	-
5829	KIA00406	NM_014657.1	2309	agcctcagctgccttgaaatttc	196990	589391	phosphatase	-	-
5830	KIA00377	NM_014659.1	2310	gcctcagctgccttgaaatttc	196991	589392	see also 5829 line	-	-
5831	PHF14	NM_014660.1	1719	ccaaagctgccttgaaatttc	34774	453843	-	-	-
5832	PHF14	NM_014660.1	2542	aagagctgccttgaaatttc	34796	453865	see also 5831 line	-	-
5833	KIA00445	NM_014662.1	392	ttgcgaactgccttgaaatttc	316193	739114	-	-	-
5834	KIA00445	NM_014662.1	394	ttgcgaactgccttgaaatttc	316194	739115	see also 5833 line	-	-
5835	KIA00445	NM_014662.1	399	ttgcgaactgccttgaaatttc	316195	739116	see also 5833 line	-	-
5836	KIA00445	NM_014662.1	554	ttgcgaactgccttgaaatttc	316200	739119	see also 5833 line	-	-
5837	KIA00445	NM_014662.1	557	ttgcgaactgccttgaaatttc	316201	739120	see also 5833 line	-	-
5838	KIA00445	NM_014662.1	725	ttgcgaactgccttgaaatttc	316204	739126	see also 5833 line	-	-
5839	KIA00445	NM_014662.1	1418	ttgcgaactgccttgaaatttc	316220	739159	see also 5833 line	-	-
5840	KIA00445	NM_014662.1	2520	ttgcgaactgccttgaaatttc	316246	739167	see also 5833 line	-	-
5841	KIA00445	NM_014662.1	2783	ttgcgaactgccttgaaatttc	316251	739176	see also 5833 line	-	-
5842	JMJD2	NM_014663.1	1001	taccctcctgccttgaaatttc	29212	772615	-	-	-

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5943	GREB1	NM.014668.2	2116	ctctctccagatgacattcattca	280557	705869	-	-	-
5944	GREB1	NM.014668.2	2118	ctctccagatgacattcattca	280558	705870	see also 5843 line	-	-
5945	GREB1	NM.014668.2	5517	ctctccagatgacattcattca	280602	705901	see also 5843 line	-	-
5946	KIAA0095	NM.014669.1	1872	ctctccagatgacattcattca	342027	713258	-	-	-
5947	KIAA0095	NM.014669.1	2154	caactctctccagatgacattca	342034	713265	see also 5846 line	-	-
5948	BZNF1	NM.014670.1	109	gcatctccagatgacattcattca	55121	471832	-	-	-
5949	KIAA0010	NM.014671.1	874	gcatctccagatgacattcattca	229946	615312	-	-	-
5950	KIAA0010	NM.014671.1	989	ctctccagatgacattcattca	229952	615321	see also 5849 line	-	-
5951	KIAA0010	NM.014671.1	1784	gtccatctccagatgacattcattca	229973	615344	see also 5849 line	-	-
5952	KIAA0010	NM.014671.1	1785	tgcatctccagatgacattcattca	229974	615345	see also 5849 line	-	-
5953	KIAA0010	NM.014671.1	2176	accactctccagatgacattcattca	229995	615354	see also 5849 line	-	-
5954	KIAA0103	NM.014673.2	413	agctctccagatgacattcattca	324430	689647	-	-	-
5955	KIAA0103	NM.014673.2	414	gcctccagatgacattcattcagaag	324431	689648	see also 5854 line	-	-
5956	KIAA0103	NM.014673.2	749	gtcatctctccagatgacattcattca	324440	689657	see also 5854 line	-	-
5957	EDEM1	NM.014674.1	1317	atgtccagatgacattcattcattca	142701	547738	-	-	-
5958	PUM1	NM.014676.1	328	accactctccagatgacattcattca	53643	474866	-	-	-
5959	PUM1	NM.014676.1	529	accctctccagatgacattcattca	53651	474896	see also 5858 line	-	-
5960	PUM1	NM.014676.1	691	atgtccagatgacattcattcattca	53653	474899	see also 5858 line	-	-
5961	PUM1	NM.014676.1	693	atgtccagatgacattcattcattca	53654	475000	see also 5858 line	-	-
5962	PUM1	NM.014676.1	698	accactctccagatgacattcattca	53655	475001	see also 5858 line	-	-
5963	PUM1	NM.014676.1	858	agaccactctccagatgacattcattca	53658	475005	see also 5858 line	-	-
5964	PUM1	NM.014676.1	868	agctctctccagatgacattcattca	53659	475007	see also 5858 line	-	-
5965	PUM1	NM.014676.1	872	tcctctctccagatgacattcattca	53660	475008	see also 5858 line	-	-
5966	PUM1	NM.014676.1	881	tggtctctccagatgacattcattca	53661	475009	see also 5858 line	-	-
5967	PUM1	NM.014676.1	958	tgctccagatgacattcattcattca	53665	475010	see also 5858 line	-	-
5968	PUM1	NM.014676.1	2228	tgccagatgacattcattcattcattca	53683	475022	see also 5858 line	-	-
5969	PUM1	NM.014676.1	2535	tcctctctccagatgacattcattca	53687	475027	see also 5858 line	-	-
5970	PUM1	NM.014676.1	2537	ctctctctccagatgacattcattca	53688	475028	see also 5858 line	-	-
5971	PUM1	NM.014676.1	2724	agccagatgacattcattcattcattca	53693	475036	see also 5858 line	-	-
5972	RMS2	NM.014677.1	1699	ctgtatctctccagatgacattcattca	317087	539848	-	-	-
5973	RMS2	NM.014677.1	2091	ggagagatgacattcattcattcattca	317098	539859	see also 5872 line	-	-
5974	RMS2	NM.014677.1	2092	ggcagagatgacattcattcattcattca	317099	539861	see also 5872 line	-	-
5975	RMS2	NM.014677.1	2622	agctctctccagatgacattcattca	317113	539874	see also 5872 line	-	-
5976	RMS2	NM.014677.1	2624	ctctctctccagatgacattcattca	317114	539875	see also 5872 line	-	-
5977	RMS2	NM.014677.1	2626	ctctctctccagatgacattcattca	317115	539876	see also 5872 line	-	-
5978	RMS2	NM.014677.1	2827	tcctctctccagatgacattcattca	317116	539877	see also 5872 line	-	-
5979	RMS2	NM.014677.1	2832	atgtctctccagatgacattcattca	317117	539878	see also 5872 line	-	-
5980	RMS2	NM.014677.1	3013	tcctccagatgacattcattcattcattca	317131	539880	see also 5872 line	-	-
5981	KIAA0092	NM.014679.1	878	tgccagatgacattcattcattcattca	342132	726678	-	-	-
5982	KIAA0092	NM.014679.1	1078	aggtctctccagatgacattcattca	342142	726689	see also 5881 line	-	-
5983	KIAA0092	NM.014679.1	1088	tggtccagatgacattcattcattcattca	342143	726690	see also 5881 line	-	-

mannosyl-
oligosaccharide 1,
2-alpha-
mannosidase

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5884	ULK2	NM_014683.2	580	ggcaccgagcaagactctatgg	107195	517407	kinase related	-
5885	ULK2	NM_014683.2	1051	aggctttatgctcacactat	107215	517420	see also 5884 line	-
5886	ULK2	NM_014683.2	1187	caggcttaagctcagctatctt	107221	517425	see also 5884 line	-
5887	ULK2	NM_014683.2	1188	aggccttaagctcagctatctt	107222	517436	see also 5884 line	-
5888	ULK2	NM_014683.2	1543	ggcaccgagctgctctgtttg	107228	517438	see also 5884 line	-
5889	ULK2	NM_014683.2	3379	ctcagcaaacatcctatctat	107251	517488	see also 5884 line	-
5890	ULK2	NM_014683.2	3384	ggagcaactctatcatctgic	107253	517489	see also 5884 line	-
5891	AGR	NM_014691.1	540	ctgctatgctgaatgaagttat	342218	699742	-	-
5892	AGR	NM_014691.1	795	ggcacatgctgaatgaagttat	342227	699750	see also 5891 line	-
5893	AGR	NM_014691.1	2140	tggatccaaacacagatcaaca	342273	699787	see also 5891 line	-
5894	AGR	NM_014691.1	2931	cagcaagcttggagaggttaatt	342311	699816	see also 5891 line	-
5895	KIA0296	NM_014695.1	1065	ggcttaactcaatgaactctca	29463	778365	DNA binding	-
5896	KIA0296	NM_014695.1	1067	gcttaactcaatgaactctca	29464	778366	see also 5895 line	-
5897	KIA0562	NM_014704.1	1771	aagacccatcaagacatctga	342607	751782	-	-
5898	HDAC9	NM_014707.1	737	ctctcatctccaaactcacctta	113726	525966	transcription regulat	-
5899	HDAC9	NM_014707.1	923	augcgaactttgctgcacattta	113728	525972	or cell cycle	-
5900	HDAC9	NM_014707.1	1692	tctctgaagctcctgctctctt	113739	525978	see also 5898 line	-
5901	HDAC9	NM_014707.1	1844	ctgggagacagcgcctctcttg	113750	525984	see also 5898 line	-
5902	HDAC9	NM_014707.1	1868	aacagatcagtagcaagagattta	113751	525987	see also 5898 line	-
5903	HDAC9	NM_014707.1	1870	caggtatagggcaagattatgic	113752	525988	see also 5898 line	-
5904	OPT10	NM_014711.3	3234	ctgtttcatgctctctctgtaga	278819	807894	-	-
5905	OPT10	NM_014711.3	3291	cggtcaaaattgttgcgcacattta	278821	807700	see also 5904 line	-
5906	RICS	NM_014715.2	3145	cagcgcaagcagacgaactaatg	342742	795788	-	-
5907	RICS	NM_014715.2	3554	atgcacacacagctcaaatat	342747	795791	see also 5906 line	-
5908	RICS	NM_014715.2	5309	ctgtttgtcccatgtctgaatc	342782	795823	see also 5906 line	-
5909	CENTB1	NM_014716.1	414	atgcggagctctctgaaaaatt	24000	457133	-	-
5910	CENTB1	NM_014716.1	415	tggcggagctctctgaaaaatto	24001	457134	see also 5909 line	-
5911	KIA0390	NM_014717.1	2862	ggacaaagctgttaatttccaag	342797	772879	-	-
5912	QLSTN3	NM_014718.1	2849	atctctggcagcagctgtatgac	140926	546489	-	-
5913	SLK	NM_014720.1	744	ttagagatctcaatctgaactct	39504	468412	kinase related	-
5914	SLK	NM_014720.1	788	ttctcaaacctcttcaatctct	39508	468415	see also 5913 line	-
5915	STAR08	NM_014725.2	768	ttctcaaacctcttcaatctct	298377	815550	-	-
5916	STAR08	NM_014725.2	3344	tctcttgaactgttgcacaaag	298343	815573	see also 5915 line	-
5917	STAR08	NM_014725.2	3347	tctcttgaactgttgcacaaact	298344	815574	see also 5915 line	-
5918	STAR08	NM_014725.2	3951	ggcgtctcaacaaagcttttgc	298345	815575	see also 5915 line	-
5919	TOX	NM_014728.1	308	ccctcatctcaacaaagctttgc	42850	489867	-	-
5920	TOX	NM_014728.1	1021	tactctcaacaaagcttttgc	42871	489868	see also 5919 line	-
5921	TOX	NM_014728.1	1029	aaccgcctcatcagactctatc	42879	489869	see also 5919 line	-
5922	TOX	NM_014728.1	1630	accgcctcatcagactctatc	42880	489877	see also 5919 line	-
5923	ZFYVE16	NM_014733.1	3798	cctctgggcaagagttttctctct	161339	556975	-	-
5924	PHF16	NM_014735.2	736	ctgtcttctgaagcaactcaatgaag	34839	816722	transcription regulat	-
						or		-

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5925	RASSF2	NM_014737.1	1005	acgacgtgcccagctgataaag	314993	679317	signal transduction	-	-
5926	RASSF2	NM_014737.1	1008	acgagccagctatataaagtc	314994	679318	see also 5925 line	-	-
5927	KUAD0195	NM_014738.1	3152	gtcgcagatgataaagctatc	86479	791802	-	plasma membrane cation-transporting ATPase	-
5928	BTIF	NM_014738.1	388	gtctctctatagatctctatgt	275909	771018	transcription, regulat	-	-
5929	BTIF	NM_014738.1	475	aggagaaagctgagcgtgtttatc	275916	771024	see also 5928 line	-	-
5930	BTIF	NM_014738.1	1296	tctctcgtctatgagctatatacc	275938	771038	see also 5928 line	-	-
5931	BTIF	NM_014738.1	1460	ggagagacagagatattatagaca	275944	771042	see also 5928 line	-	-
5932	BTIF	NM_014738.1	1806	atctgagctgacgagaaagctc	275957	771049	see also 5928 line	-	-
5933	BTIF	NM_014738.1	1876	tctctcacgctctgaagtcaaac	275962	771052	see also 5928 line	-	-
5934	BTIF	NM_014738.1	2637	caagaggaacctctttttgaatt	275982	771065	see also 5928 line	-	-
5935	BTIF	NM_014738.1	2695	gacaatatgcttgcacaacct	275984	771068	see also 5928 line	-	-
5936	BTIF	NM_014738.1	2703	ctctctcaaaactcaaatcct	275986	771069	see also 5928 line	-	-
5937	BTIF	NM_014738.1	2806	caagatgatactgtgattatt	275987	771072	see also 5928 line	-	-
5938	BTIF	NM_014738.1	2839	gaaaagaaatgctgtgattctc	275988	771074	see also 5928 line	-	-
5939	TMS6P4	NM_014742.1	1771	gtatctctaacagctttcttc	275345	655765	-	-	-
5940	TBC1D5	NM_014744.1	2168	agaagacttcttcaaatcagct	342933	732638	-	-	-
5941	SNX17	NM_014748.2	794	acctctctgagctgagctatgct	126326	530202	see also 5941 line	receptor binding	-
5942	SNX17	NM_014748.2	797	tctgagctctcaatgctatgagct	126327	530203	see also 5941 line	-	-
5943	DLG7	NM_014750.3	1630	tggcctcaacagagctctcttgc	279332	753583	-	-	-
5944	PTDSS1	NM_014754.1	393	cgagctcttgagctgaatgctttt	219010	671382	-	-	-
5945	PTDSS1	NM_014754.1	1098	tcccaacagagagagctctctgc	219032	671377	see also 5944 line	-	-
5946	TRIP-BR2	NM_014755.1	342	tggctctgagagcaaatctgct	300964	688649	-	-	-
5947	TRIP-BR2	NM_014755.1	396	caactctaacagcgcagactgct	300966	688652	see also 5946 line	-	-
5948	TRIP-BR2	NM_014755.1	401	tacacgcgcagactctcttcaac	300967	688653	see also 5946 line	-	-
5949	DHCR24	NM_014762.1	966	gccacgaacactgaatgacttgc	226559	672141	-	oxidoreductase	desmosterolosis(デスモステロシス), Alzheimer disease(アルツハイマー病)
5950	DHCR24	NM_014762.1	1610	ccgaggtctatgcacgaactctc	226568	672151	see also 5949 line	-	-
5951	KIAA0669	NM_014778.1	2918	caactctgccactctctcttca	5644	441385	-	-	-
5952	KIAA0669	NM_014778.1	3205	atgcactgttaaatctcttcca	5647	441387	see also 5951 line	-	-
5953	RB1CC1	NM_014781.1	1129	tggctgtctctaacagacagctgt	343284	677374	-	-	ataxia telangiectasia(毛細血管拡張性運動失調)
5954	RB1CC1	NM_014781.1	1131	tggtctctcaacagacagctgt	343284	677375	see also 5953 line	-	-
5955	RB1CC1	NM_014781.1	1133	gtctctcaacagacagctgttcca	343285	677376	see also 5953 line	-	-
5956	RB1CC1	NM_014781.1	1443	gactctgaatgagcttcaaatgca	343293	677382	see also 5953 line	-	-
5957	RB1CC1	NM_014781.1	1568	ttcccaactgaatgcttcaaatgca	343299	677389	see also 5953 line	-	-
5958	RB1CC1	NM_014781.1	1681	ttctctcaagatcttttctgact	343302	677394	see also 5953 line	-	-
5959	RB1CC1	NM_014781.1	1682	ttctctcaagatcttttctgact	343303	677395	see also 5953 line	-	-
5960	RB1CC1	NM_014781.1	1687	ttctctcaagatcttttctgact	343304	677396	see also 5953 line	-	-
5961	RB1CC1	NM_014781.1	1839	aggagattgctgctctgaatgagc	343315	677405	see also 5953 line	-	-
5962	RB1CC1	NM_014781.1	1982	tgcagatgaagctctgctgagagc	343316	677406	see also 5953 line	-	-
5963	ALEX2	NM_014782.3	517	ctgctctgctgctgctgactgact	343389	721687	-	-	-
5964	ALEX2	NM_014782.3	1797	aaagcttaagtgctgactgaaac	343406	721721	see also 5963 line	-	-

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5965	ARRGAP1 1A	NM_014738.2	3235	ttcttcagctccatgaagaatt	343478	806036	-	-	-
5966	ARRGAP1 1A	NM_014738.2	3238	gtcttcagctccatgaagaatttat	343479	806038	see also 5965 line	-	-
5967	ARRGAP1 1A	NM_014738.2	3243	ttcttcagctccatgaagaattttt	343481	806039	see also 5965 line	-	-
5968	KIA00758	NM_014738.1	341	gaagagccgcagctgctctcttc	343500	780031	-	-	-
5969	KIA00758	NM_014738.1	347	gtccatctatctctctctctctc	343501	780032	see also 5968 line	-	-
5970	KIA00758	NM_014738.1	402	atctctgaagctccatcaatctac	343505	780038	see also 5968 line	-	-
5971	DNAJ06	NM_014787.1	677	ctgttgctgctctctctctttt	196183	812979	-	-	-
5972	DNAJ06	NM_014787.1	2802	ctgttgcaacctctgaacaattac	196203	813015	see also 5971 line	-	-
5973	DNAJ06	NM_014787.1	2817	aacaattacgacaaagctgatttc	196204	813018	see also 5971 line	-	-
5974	ZFRHX1B	NM_014795.2	511	cggctgcaagcggcgcacaacagc	14245	449839	transcription regulator	Graves' disease (グレーブス病)	-
5975	ZFRHX1B	NM_014795.2	544	aggaacaacctgttgactatga	14246	449841	or, phosphatase	-	-
5976	ZFRHX1B	NM_014795.2	1174	taccgcacgcaggaattgaaga	14255	449851	see also 5974 line	-	-
5977	ZFRHX1B	NM_014795.2	1280	cgatgcacacaaatgctgaac	14256	449853	see also 5974 line	-	-
5978	ZFRHX1B	NM_014795.2	1496	ctgttaatgcccgaattgaagac	14259	449859	see also 5974 line	-	-
5979	ZFRHX1B	NM_014795.2	1496	ctgttaatgcccgaattgaagac	14260	449860	see also 5974 line	-	-
5980	ZFRHX1B	NM_014795.2	1502	atgagccgaattgaagaacatctc	14261	449861	see also 5974 line	-	-
5981	ZFRHX1B	NM_014795.2	1503	tgcgcgaattgaagaacatctc	14261	449861	see also 5974 line	-	-
5982	ZFRHX1B	NM_014795.2	1669	tcccaattgctaaactctctat	14268	449870	see also 5974 line	-	-
5983	ZFRHX1B	NM_014795.2	2459	agacgtctctgctatgaacatg	14296	449875	see also 5974 line	-	-
5984	ZFRHX1B	NM_014795.2	2618	agcgtttgctctccacagctaac	14299	449877	see also 5974 line	-	-
5985	ZFRHX1B	NM_014795.2	2619	gcagctgtctccacagctaac	14300	449878	see also 5974 line	-	-
5986	ZFRHX1B	NM_014795.2	2667	cgagctctctccacagctaac	14303	449882	see also 5974 line	-	-
5987	ZFRHX1B	NM_014795.2	2714	cgagctctctccacagctaac	14305	449886	see also 5974 line	-	-
5988	ZFRHX1B	NM_014795.2	2745	ttctctctccagctccacaaac	14309	449888	see also 5974 line	-	-
5989	ZFRHX1B	NM_014795.2	3380	atgagccgaagctcactatgca	14322	450005	see also 5974 line	-	-
5990	ZFRHX1B	NM_014795.2	3469	cgagctatgctgctgctactatg	14325	450008	see also 5974 line	-	-
5991	KIA00748	NM_014796.1	3516	ttctctctgctgctgctgctg	14328	450007	see also 5974 line	-	-
5992	ZNF450	NM_014797.1	960	tactctatctgctgctgctgctg	343661	809351	-	-	-
5993	ZNF450	NM_014797.1	285	tactctatctgctgctgctgctg	45614	471101	protein binding	-	-
5994	ELMO1	NM_014800.8	375	gctctgtgcaacatgctgatt	126479	673106	apoptosis,	-	-
5995	ELMO1	NM_014800.8	1845	cgcgttttgcaacatgctgatt	126515	673151	signal transduction	-	-
5996	KIA00528	NM_014802.1	1658	cgactctatctctctctgctat	265117	648145	see also 5994 line	-	-
5997	KIA00528	NM_014802.1	1661	cgactctatctctctctgctat	265118	648146	see also 5996 line	-	-
5998	KIA00753	NM_014804.1	652	cgactctatctctctctgctat	343736	737451	see also 5996 line	-	-
5999	KIA00753	NM_014804.1	1050	cgactctatctctctctgctat	343741	737456	see also 5998 line	-	-
6000	FARP2	NM_014808.1	424	gagatgaagacacacacacac	322788	756918	-	-	-
6001	FARP2	NM_014808.1	1202	cgcgttttgctgctgctgctg	322789	756923	see also 6000 line	-	-
6002	FARP2	NM_014808.1	416	gagatgaagacacacacacac	322808	756924	see also 6000 line	-	-
6003	FARP2	NM_014808.1	1129	ggctctctgctgctgctgctg	322827	756940	see also 6000 line	-	-

6046	SNAP1	NM_014841.1	2070	ccagctgcagcctctctctctg	328283	603866	-	-	-
6047	KIA0274	NM_014845.4	231	tcagctgagcctctctctctg	344565	749859	-	-	-
6048	KIA0274	NM_014845.4	644	actatctgacatcttctctct	344584	749853	see also 8047 line	-	-
6049	KIA00196	NM_014846.1	2736	tcagctgagcctctctctctg	344735	779311	-	-	-
6050	SRGAP2	NM_014850.1	1590	ctcagctgagcctctctctct	288263	554081	-	-	-
6051	SRGAP2	NM_014850.1	1592	cagctgagcctctctctctct	288264	554082	see also 6050 line	-	-
6052	SRGAP2	NM_014850.1	1639	agagctgagcctctctctct	298265	554085	see also 6050 line	-	-
6053	KIA00682	NM_014852.1	973	gcgcagctgagcctctctct	323216	478181	-	-	-
6054	HHL	NM_014852.1	1066	ctcagctgagcctctctctct	344874	705266	-	-	-
6055	HHL	NM_014857.2	1148	ttctcaacaagaatctctctg	344875	705292	see also 6054 line	-	-
6056	HHL	NM_014857.2	1196	ccagctgagcctctctctctg	344877	705293	see also 6054 line	-	-
6057	HHL	NM_014857.2	1198	cagctgagcctctctctctg	344878	705294	see also 6054 line	-	-
6058	HHL	NM_014857.2	1913	gcgctgagcctctctctctg	344890	705308	see also 6054 line	-	-
6059	HHL	NM_014857.2	1925	tcagctgagcctctctctct	344891	705309	see also 6054 line	-	-
6060	HHL	NM_014857.2	2511	cagctgagcctctctctct	344904	705323	see also 6054 line	-	-
6061	KIA0072	NM_014855.1	940	tactttcaacgctctctctg	344914	785189	-	-	-
6062	ARNT2	NM_014862.1	2119	gcgcagctgagcctctctctg	976	441785	transcription, regulat	transcription factor	-
6063	S-6ST	NM_014863.1	721	tcgcacatgaacgctctctg	217472	805454	-	-	-
6064	GNAP1	NM_014865.1	2884	atccgagagcctctctctctg	344995	760641	cell cycle	-	-
6065	GNAP1	NM_014865.1	4823	agctcagagcctctctctctg	345007	760665	see also 6064 line	-	-
6066	GNAP1	NM_014865.1	4828	tcagctgagcctctctctctg	345008	760667	see also 6064 line	-	-
6067	USP62	NM_014871.1	518	tcagctgagcctctctctctg	190208	581721	-	-	-
6068	ZBTB5	NM_014872.1	1273	tcagctgagcctctctctctg	137145	783297	-	-	-
6069	KIA0208	NM_014873.1	319	tcgctgagcctctctctctg	216334	603503	-	-	-
6070	KIA0208	NM_014873.1	743	gcgcagcctctctctctctg	216345	603519	see also 6069 line	-	-
6071	KIA0208	NM_014873.1	970	tcctcagctgagcctctctg	216350	603527	see also 6069 line	-	-
6072	KIA0208	NM_014873.1	972	ctcagctgagcctctctctg	216351	603528	see also 6069 line	-	-
6073	KIA0208	NM_014873.1	973	tcagctgagcctctctctg	216352	603529	see also 6069 line	-	-
6074	MFN2	NM_014874.1	1569	agctgagcctctctctctg	345082	537549	-	-	-
6075	DCI,PRE1A	NM_014881.1	3710	ttctccatctctctctctg	345219	669769	-	-	-
6076	KIAA0053	NM_014882.1	1937	tcctgagcctctctctctg	345246	679186	-	-	-
6077	FAM13A1	NM_014883.1	1614	gcctgagcctctctctctg	345284	679109	-	-	-
6078	RBM16	NM_014892.1	490	gcctgagcctctctctctg	53975	485735	-	-	-
6079	RBM16	NM_014892.1	499	atctcagcctctctctctg	53977	485736	see also 6078 line	-	-
6080	RBM16	NM_014892.1	1369	cagctgagcctctctctctg	54002	485750	see also 6078 line	-	-
6081	RBM16	NM_014892.1	3755	tcctgagcctctctctctg	54057	485776	see also 6078 line	-	-
6082	RBM16	NM_014892.1	3760	agctcagcctctctctctg	54058	485777	see also 6078 line	-	-
6083	RHO1B3	NM_014893.1	1583	gcctgagcctctctctctg	135192	539763	-	-	-
6084	RNF4A	NM_014901.3	889	gcctgagcctctctctctg	345444	760646	-	-	-
6085	CPEB3	NM_014912.1	1050	agcctgagcctctctctctg	58624	482138	-	-	-
6086	CPEB3	NM_014912.1	1061	gcctgagcctctctctctg	58625	482139	see also 6085 line	-	-
6087	CPEB3	NM_014912.1	1135	tcagctgagcctctctctg	58632	482147	see also 6085 line	-	-

6131	ANKR06	NM.014942.1	1302	aggaactctactcaacagc	346243	746721	see also 6130 line or	-	-
6132	ZHX2	NM.014943.2	706	ggttttttagtgcgaactctgc	14480	817048	-	-	-
6133	ZHX2	NM.014943.2	2475	ggctctgtctgcactgagttgt	14494	817072	see also 6132 line	-	-
6134	KAA043	NM.014945.1	882	tactctgcacacagtgatccgc	117666	814168	-	-	-
6135	KAA043	NM.014945.1	1595	tactctgcacgacctactatgc	117681	814203	see also 6134 line	-	-
6136	SPG4	NM.014946.3	1193	tgtcaactcttaattgaatgaa	101155	515220	-	adenosinetriphosphatase	specific paraplegia (顯性脊髓痲)
6137	SPG4	NM.014946.3	1945	gttgtgttgagaattctgcttta	101180	515233	see also 6136 line	-	-
6138	KAA1041	NM.014947.1	329	aggtctgtctctgttaactctca	5727	442358	-	transcription factor	-
6139	KAA1041	NM.014947.1	482	aggaactctgtgaccacataca	5731	442363	see also 6138 line	-	-
6140	KAA1041	NM.014947.1	836	agggctctgaactctcatatagc	5739	442376	see also 6138 line	-	-
6141	KAA1041	NM.014947.1	840	aggtctcaactctatagatagc	5741	442377	see also 6138 line	-	-
6142	KAA1041	NM.014947.1	849	tccatatactagatctgaattg	5743	442378	see also 6138 line	-	-
6143	KAA1041	NM.014947.1	933	gactacaagaatacattcttata	5747	442380	see also 6138 line	-	-
6144	KAA1041	NM.014947.1	1225	ggacactctactgacacaaagc	5763	442396	see also 6138 line	-	-
6145	KAA1041	NM.014947.1	2007	accctctgtatctcatatcc	5790	442411	see also 6138 line	-	-
6146	UBCE1P5	NM.014948.2	230	accttacttctgaattgaataa	324904	746619	-	-	-
6147	KIA0097	NM.014949.1	1045	caaacctctctgctatgaatgt	346275	736418	-	-	-
6148	KIA0097	NM.014949.1	1075	ctcaacctctctctatctcatcc	346276	736420	see also 6147 line	-	-
6149	KIA0097	NM.014949.1	1465	agcagggccattctatctgacct	346282	736427	see also 6147 line	-	-
6150	KIA0097	NM.014949.1	1477	tctatagccatattgataagca	346284	736430	see also 6147 line	-	-
6151	KAA1052	NM.014956.1	4407	tgggaagtggtctgaacagattt	346343	775344	-	-	-
6152	RFX	NM.014961.1	508	ggacacatctactcttgaattt	346350	729776	-	-	-
6153	RFX	NM.014961.1	1893	aacaggcaagaagaccttaaatg	346378	729906	see also 6152 line	-	-
6154	DHX30	NM.014966.2	2404	ctggaactctcaacacatcaatt	48212	483639	-	-	-
6155	DHX30	NM.014966.2	2594	aaagcgtctgagaatgaattctcc	48215	471798	see also 6154 line	-	-
6156	KAA1018	NM.014967.1	1489	agctcttcttaactgaatttagc	346463	648306	-	-	-
6157	KAA1018	NM.014967.1	1500	ggctcttcttaactgaatttagc	346464	648307	see also 6156 line	-	-
6158	KAA093	NM.014968.3	364	gagaaggaagaagtgaattcataa	346517	805643	see also 6158 line	-	-
6159	KIA0093	NM.014968.3	501	agagttctgtatattctctga	346517	805643	signal transduction	-	-
6160	KIFAP3	NM.014970.2	282	agggcctcttaactctcaaaagc	120564	525165	see also 6160 line	-	-
6161	KIFAP3	NM.014970.2	285	acpcagactctctcaaaagaa	120565	525166	see also 6160 line	-	-
6162	KIFAP3	NM.014970.2	2294	aagttttctgtgaactactctca	120642	525218	see also 6160 line	-	-
6163	KIFAP3	NM.014970.2	2360	ctactacttcttgatctgctga	120645	525219	see also 6160 line	-	-
6164	PCNX	NM.014982.1	3191	tctcaactcttgatctgttttgc	346623	707483	-	-	-
6165	PCNX	NM.014982.1	3623	cgagagagctcaatctgctatca	346643	707494	see also 6164 line	-	-
6166	PCNX	NM.014982.1	3647	tctcaactcttgatctgttttgc	346643	707496	see also 6164 line	-	-
6167	PCNX	NM.014982.1	4459	tctcaactcttgatctgttttgc	346680	707513	see also 6164 line	-	-
6168	PCNX	NM.014982.1	5275	agggcctcttgatctgttttgc	346715	707529	see also 6164 line	-	-
6169	WDFY3	NM.014991.3	6513	aggaagcctcttgatctgtttgc	161003	780374	-	-	-
6170	WDFY3	NM.014991.3	6576	tctgaagcctcttgatctgtttgc	161005	780378	see also 6169 line	-	-
6171	WDFY3	NM.014991.3	8996	tctgaagcctcttgatctgtttgc	161087	780428	see also 6169 line	-	-
6172	WDFY3	NM.014991.3	9021	caacaaagccttgatctgtttgc	161088	780428	see also 6169 line	-	-

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6173	WDFY3	NM_014891.3	10417	gagctcaactcagatgagaaga	161124	790458	see also 6169 line	-	-
6174	STC3BL	NM_015001.1	1474	agagctggctttctcatt	101859	515774	-	-	transcription_regulat
6175	SHARP	NM_015001.2	821	caggagcgcctctagaacata	65966	445751	or	-	-
6176	SHARP	NM_015001.2	822	aggagcgcctctagaacata	65966	445758	see also 6175 line	-	-
6177	SHARP	NM_015001.2	823	ggagcgcctctagaacatg	65967	445759	see also 6175 line	-	-
6178	SHARP	NM_015001.2	890	aggagcgcctctagaacatg	65971	445762	see also 6175 line	-	-
6179	SHARP	NM_015001.2	892	ggagcgcctctagaacatg	65972	445763	see also 6175 line	-	-
6180	SHARP	NM_015001.2	697	tacattacagatctcattact	65973	445764	see also 6175 line	-	-
6181	SHARP	NM_015001.2	723	tcgagcgcctctcattcagaga	65975	445766	see also 6175 line	-	-
6182	SHARP	NM_015001.2	842	ggagcgcctctcattcagaga	65979	445769	see also 6175 line	-	-
6183	SHARP	NM_015001.2	4445	ggagcgcctcagaggtatctac	66070	445854	see also 6175 line	-	-
6184	FBXO21	NM_015002.1	283	cagcagctactcgaattggtg	228531	757397	-	-	-
6185	FBXO21	NM_015002.1	487	ggcttgcagctcgaattggtg	228542	757403	see also 6184 line	-	-
6186	USP33	NM_015017.2	282	ttgcttcagcttggatctactac	189609	583555	-	-	-
6187	USP33	NM_015017.2	497	ttctcattatgcttgatctg	189619	583563	see also 6186 line	-	-
6188	USP33	NM_015017.2	2518	ttctcattatgcttgatctg	189664	583621	see also 6186 line	-	-
6189	WDTG1	NM_015023.2	866	ttgacttctccctcagactgac	43393	816599	-	-	protein transporter
6190	XPOT	NM_015024.2	119	ggagcttcccaactagaagac	245703	653378	receptor activity	-	-
6191	XPOT	NM_015024.2	120	ggagcttcccaactagaagac	245704	653379	see also 6190 line	-	-
6192	XPOT	NM_015024.2	359	ttggagcttcccaactagaag	245712	653382	see also 6190 line	-	-
6193	XPOT	NM_015024.2	869	ttgcacctctctcgaatttctc	245724	653391	see also 6190 line	-	-
6194	XPOT	NM_015024.2	1168	ttgcacctctctcgaatttctc	245733	653419	see also 6190 line	-	-
6195	XPOT	NM_015024.2	2026	atcacagcgcgcgcacttctca	245758	653454	see also 6190 line	-	-
6196	XPOT	NM_015024.2	2028	cacacagcgcgcgcacttctca	245757	653455	see also 6190 line	-	-
6197	XPOT	NM_015024.2	2796	cagcagcctatggacatttttgc	245778	653471	see also 6190 line	-	-
6198	POP1	NM_015029.1	312	ctcagagatgcccaagatata	199107	724124	-	-	ribonuclease p
6199	POP1	NM_015029.1	315	aggagatgcccaagatata	199109	724125	see also 6198 line	-	-
6200	NNMAT2	NM_015039.2	523	ggcgcacgcctctctatctgt	209018	598664	-	-	-
6201	NNMAT2	NM_015039.2	1178	ggcgcacgcctctctatctgt	209032	598682	see also 6200 line	-	-
6202	KIAA0625	NM_015046.4	6196	ctcgttcttcttggatctctgt	347416	811428	-	-	-
6203	KIAA0625	NM_015046.4	6958	tccagatgcatctcagacatg	347433	811456	see also 6202 line	-	-
6204	KIAA0625	NM_015046.4	7107	aaagcaggaatgaactcattata	347443	811463	see also 6202 line	-	-
6205	KIAA0090	NM_015047.1	2757	acpcagacgaatgaactcattat	347516	760782	-	-	-
6206	KIAA0090	NM_015047.1	2828	ctgcagcactctttgtttgt	347522	760785	see also 6205 line	-	-
6207	KIAA0090	NM_015047.1	2958	tgatttttgccacatgaactact	347526	760788	see also 6205 line	-	-
6208	ALS2CR3	NM_015049.1	841	tggagcagcgttttgatctg	170988	773157	-	-	receptor binding
6209	KIAA0082	NM_015050.1	1492	ctgcagcttggcatctgagct	63968	478497	-	-	-
6210	KIAA0322	NM_015052.1	961	ggcttctccacatctcattct	230102	615405	-	-	-
6211	KIAA0322	NM_015052.1	3124	ggcttctccacatctcattct	230122	615438	see also 6210 line	-	-
6212	KIAA0322	NM_015052.1	3322	ttcttgcagcagcactttt	230129	615445	see also 6210 line	-	-
6213	KIAA0322	NM_015052.1	3327	cgcagcagcagcacttttgaat	230130	615446	see also 6210 line	-	-
6214	SWAP70	NM_015055.1	1336	agctggagcagcttctctaaag	153507	468529	-	-	-

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		186		transcription_regulat		or		transcription_regulat	
6215	GASCI	NM.015061.1	767	agcccaaatcttgcgcata	27445	753688	-	27445	753688
6216	GASCI	NM.015061.1	2318	tcagggttcacagtgctct	27471	753732	see also 6215 line	27471	753732
6217	GASCI	NM.015064.2	2885	gacctctcgtggtcgtcttgc	27487	753788	see also 6215 line	27487	753788
6218	ELKS	NM.015064.2	1017	augcttccaaacacccatttgc	347538	743957	-	347538	743957
6219	SLAC2-B	NM.015065.1	990	caggccaaataatgaattccacc	347589	740719	-	347589	740719
6220	OAZ	NM.015068.1	770	ccaccacccacccacacacacg	347728	744035	-	347728	744035
6221	OAZ	NM.015068.1	2114	tgcaggttcagctcaaacacagc	347736	744049	see also 6220 line	347736	744049
6222	KIF1B	NM.015074.1	245	ggccaactgcgcacattattata	87140	505228	-	87140	505228
6223	KIF1B	NM.015074.1	247	ggccaactgcgcacattattata	87141	505229	see also 6222 line	87141	505229
6224	KIF1B	NM.015074.1	1881	ccctcatctcatctgtaaaaccc	87172	505282	see also 6222 line	87172	505282
6225	SARM1	NM.015077.1	1307	atcacccpagaaggtttctttag	246630	633513	receptor activity	246630	633513
6226	SPQ20	NM.015087.3	1767	gtccagctaaatgcattcgttaac	347992	754778	-	347992	754778
6227	SPQ20	NM.015087.3	1768	gtccagctaaatgcattcgttaac	347993	754779	see also 6226 line	347993	754779
6228	SPQ20	NM.015087.3	1770	cagcaataatgcattcgttaacat	347994	754780	see also 6226 line	347994	754780
6229	SPQ20	NM.015087.3	1771	cagcaataatgcattcgttaacat	347995	754781	see also 6226 line	347995	754781
6230	MAP3K7IP	NM.015093.2	213	tctatgacctgcgcacaaatttc	219857	752416	kinase related	219857	752416
6231	MAP3K7IP	NM.015093.2	379	tctatgacctgcgcacaaatttc	219862	752421	see also 6230 line	219862	752421
6232	MAP3K7IP	NM.015093.2	384	gtccagcaataatgcattcgttct	219863	752422	see also 6230 line	219863	752422
6233	MAP3K7IP	NM.015093.2	1093	tctcagcaataatgcattcgttct	219861	752445	see also 6230 line	219861	752445
6234	MAP3K7IP	NM.015093.2	1095	cgcgcacagccagcaataatgc	219862	752446	see also 6230 line	219862	752446
6235	MAP3K7IP	NM.015093.2	1096	gtccctctagccattatatacttc	219863	752447	see also 6230 line	219863	752447
6236	CAMTA2	NM.015098.2	1232	tgcacctcgtcttctctcaac	348017	800882	-	348017	800882
6237	CAMTA2	NM.015098.2	3383	cacttaagatttcgacctctctaac	348033	800898	see also 6236 line	348033	800898
6238	POGZ	NM.015100.1	325	tccggcctctctcaaaatgcacatc	35557	454263	-	35557	454263
6239	POGZ	NM.015100.1	326	cgcgcctctctcaaaatgcacatc	35558	454264	see also 6238 line	35558	454264
6240	POGZ	NM.015100.1	1501	tctctatctctctcaaaatgcacatc	35585	454297	see also 6238 line	35585	454297
6241	Ctorf7	NM.015101.1	827	tctcagctctctcaaaatgcacatc	303143	671514	-	303143	671514
6242	NHPH4	NM.015102.2	3866	tgtccaaagccgcaggaataaagtc	134289	538284	signal transduction	134289	538284
6243	NHPH4	NM.015102.2	4163	cagccgctttctctctctcaaac	134271	538287	see also 6242 line	134271	538287
6244	SRISNF2L	NM.015106.1	807	agactccgcctctctctctctcaaac	41113	468393	-	41113	468393
6245	SRISNF2L	NM.015106.1	1101	atragagacacacacacacacacac	41124	468304	see also 6244 line	41124	468304
6246	SRISNF2L	NM.015106.1	2929	cacacagagagagagagagagagag	41165	468344	see also 6244 line	41165	468344
6247	SRISNF2L	NM.015106.1	4054	tggcttccagctccaaatgcattgag	41175	468360	see also 6244 line	41175	468360
6248	KIAA1111	NM.015107.1	766	aagcttcacacacacacacacacac	29587	454351	transcription_regulat	29587	454351
6249	SAC511	NM.015101.1	1899	tgcaggggttcacacacacacacac	100786	514935	or	100786	514935
6250	MAS1205	NM.015112.1	682	agcatcacacacacacacacacac	90341	508783	kinase related	90341	508783
6251	MAS1205	NM.015112.1	1379	gcccgagagctccgcaggaacac	90352	508801	see also 6250 line	90352	508801
6252	MAS1205	NM.015112.1	2282	aactctgtagggagagagagagag	90365	508819	see also 6250 line	90365	508819
6253	MAS1205	NM.015112.1	3603	tccacagcgcctccgcagagagagag	90373	508838	see also 6250 line	90373	508838
6254	KIAA0276	NM.015115.1	510	tgcacacagacacacacacacacac	348200	804724	-	348200	804724
6255	KIAA0276	NM.015115.1	820	tgcagcagcagcagcagcagcagcag	348210	804739	see also 6254 line	348210	804739

(Charcot-Marie-Tooth neuropathy (シャルコ-マリー-トゥースネフロシ))

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6256	KIA0290	NM_015122.1	1407	gcccacagggccctcatgaagc	218840	606401	-	-
6257	MCLC	NM_015121.2	765	aagttcaggccctcatgaagtg	348510	757140	-	-
6258	SLC35D1	NM_015138.1	361	tccacacatccctcatatttt	258283	798886	-	sugar porter
6259	RCOR	NM_015156.1	1275	accgcgttcaacatgagtag	37929	457009	-	-
6260	MCLG1	NM_015166.2	509	gcttcctcccaactctgaattt	263621	747118	channel	-
6261	PTDSR	NM_015167.1	75	tggcaccggcgaacactctacg	250754	637378	-	-
6262	PTDSR	NM_015167.1	582	tgcctccgcctctctctctcagg	250769	637385	see also 6261 line	-
6263	SULF1	NM_015170.1	807	tacagacagcagaagaacacatc	200620	592351	apoptosis	-
6264	SULF1	NM_015170.1	1247	aagcttgagttgagtagtcacaa	200636	592362	see also 6263 line	-
6265	SULF1	NM_015170.1	291	cactaacgagcagcttaactact	200639	592365	see also 6263 line	-
6266	TBC1D1	NM_015178.1	467	aggacttgaaatcaaacgaac	186284	708811	-	-
6267	TBC1D1	NM_015178.1	1330	cgatcagccacacatcagttat	186304	708824	see also 6266 line	-
6268	KIA0483	NM_015176.1	1078	agccatcagctctctagaaat	348949	708647	-	-
6269	SHYB1B2	NM_015178.1	646	cggcgaacacagcttaagagtt	110717	520317	signal transduction	-
6270	SYNE2	NM_015180.3	444	cccttccctccgaaagaagtc	348988	791387	receptor activity	-
6271	CHAC	NM_015186.1	7270	aagcaatcccatctatctctg	276677	782533	-	-
6272	KIA0746	NM_015187.1	1680	ccctctctctggttcctcatcag	348500	777198	-	-
6273	PLCB1	NM_015192.2	865	ctcgaacctgaatctgaatc	198211	590467	cell cycle	-
6274	PLCB1	NM_015192.2	1802	agggacacctctctggtctatcc	198233	590492	see also 6273 line	-
6275	PLCB1	NM_015192.2	3145	gaggcagagaaacatgctaaa	198282	590314	see also 6273 line	-
6276	KIA04922	NM_015196.2	601	ctggtctcgaactctgcaaaa	349575	777473	-	-
6277	BOPI	NM_015200.3	2138	tgcctctcagctgagcacaatga	324005	704273	-	-
6278	KIA04874	NM_015208.2	216	tgcccaactctcggttccacaaa	349833	720511	-	-
6279	KIA0433	NM_015216.1	1237	atgtctctggtctgaagtttat	197029	784279	phosphatase	-
6280	KIA0433	NM_015216.1	2767	agctctagcagatctctctatc	197068	784319	see also 6279 line	-
6281	KIA0433	NM_015216.1	3054	cagtgcaaacagctctctgattc	197080	784328	see also 6279 line	-
6282	KIA0433	NM_015216.1	3056	ctggaacagctctctgatttat	197081	784328	see also 6279 line	-
6283	KIA0433	NM_015216.1	3085	ttgtcaacgctctcaactcctg	197083	784332	see also 6279 line	-
6284	AGTPBP1	NM_015239.1	761	gacactctctctgattctctaaa	185437	579707	-	-
6285	AGTPBP1	NM_015239.1	2129	ctgcgcgaagtagtaaatctaa	185479	579750	see also 6284 line	-
6286	CEMTD2	NM_015242.2	2761	accactctgtgacatctctacg	24276	728341	signal transduction	-
6287	ANKS1	NM_015245.1	3146	ggacacagctctcgaacatttc	350271	805899	-	-
6288	ANKS1	NM_015245.1	3147	agccagatccgcgaacatttc	350272	805900	see also 6287 line	-
6289	ANKS1	NM_015245.1	3150	acagatccgcgaacattctctg	350273	805901	see also 6287 line	-
6290	CYLD	NM_015247.1	548	atcctctctctctctctctctaa	183193	582518	-	-
6291	RICD2	NM_015250.1	378	agctctccgagcagctcatcag	321247	532709	-	-
6292	KIA0903	NM_015252.1	1950	gactctctgctctctctctctc	350339	797837	-	-
6293	KIA0903	NM_015252.1	3122	gaggttgagtgagctcatctaac	350375	797881	see also 6292 line	-
6294	SATB2	NM_015265.1	245	ggcctgagagagctgttgattc	10967	448298	-	-
6295	SATB2	NM_015265.1	671	ccctctctccagctgattgatt	10979	448312	see also 6294 line	-
6296	SATB2	NM_015265.1	1023	atgtccctctctgtaaaccaaca	10993	448321	see also 6294 line	-
6297	SATB2	NM_015265.1	1490	gacaaacagctctctctctaaag	10996	448327	see also 6294 line	-
6298	SATB2	NM_015265.1	1493	aagacgctctctctctctctctg	10997	448328	see also 6294 line	-
6299	SATB2	NM_015265.1	1930	cccggctctcgcacaaagctctcc	11001	448331	see also 6294 line	-

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6300	ADCY6	NM.015270.2	2489	ttccacgaatgagcattatca	164960	562751	-	-	-
6301	TRIM2	NM.015271.2	1382	ccagacacacgcatttaactca	120704	525144	-	-	-
6302	TRIM2	NM.015271.2	791	ttgagccacacagcccttaatt	120716	525152	see also 6301 line	-	-
6303	NEDD4L	NM.015271.2	731	ttggcgcacacagcccttaatt	230363	616491	-	-	-
6304	NEDD4L	NM.015271.2	732	ttggcgcacacagcccttaatt	230364	616492	see also 6303 line	-	-
6305	NEDD4L	NM.015271.2	1393	ctcagcttcacacagcagcaatt	230376	616504	see also 6303 line	-	-
6306	NEDD4L	NM.015271.2	1395	ctcagcttcacacagcagcaatt	230377	616505	see also 6303 line	-	-
6307	NEDD4L	NM.015271.2	1396	ctcagcttcacacagcagcaatt	230378	616506	see also 6303 line	-	-
6308	NEDD4L	NM.015271.2	1996	ctcagcttcacacagcagcaatt	230397	616522	see also 6303 line	-	-
6309	NEDD4L	NM.015271.2	1998	ctcagcttcacacagcagcaatt	230398	616523	see also 6303 line	-	-
6310	SASH1	NM.015278.2	2277	aagtcgcacactcaagttaatt	305876	768884	cell cycle	-	-
6311	KIAA1043	NM.015281.1	1962	ggcgcacacagcagcagcaatt	350873	715594	-	-	-
6312	KIAA1043	NM.015281.1	2236	ccagcttcacacagcagcaatt	350875	715596	see also 6311 line	-	-
6313	KIAA0467	NM.015284.1	4744	ggccttcacacttcgttcacaaa	166967	812270	-	-	-
6314	PHF15	NM.015288.4	1203	ggccttcacacttcgttcacaaa	34821	816433	transcription_regulat	-	-
6315	PHF15	NM.015288.4	1206	ctcgcacacagcagcagcaatt	34821	816434	see also 6314 line	-	-
6316	TRIM37	NM.015294.1	72	ttctgaagctttcccaattttca	160384	810777	-	-	-
6317	TRIM37	NM.015294.1	363	ctcacttttaagaattttttct	160394	810782	see also 6316 line	-	-
6318	TRIM37	NM.015294.1	572	atgagctttcttgcgaatttaag	160400	810785	see also 6316 line	-	-
6319	TRIM37	NM.015294.1	1992	ggcacaattctcgaagaataa	160443	810837	see also 6316 line	-	-
6320	KIAA0759	NM.015305.2	718	ggcgaatgaggaaggtttctcc	351321	753169	-	-	-
6321	FNBP4	NM.015308.1	1699	caagccttcacacagcagcaatt	351372	753592	-	-	-
6322	EFAP2	NM.015310.1	713	aagcttcgttcagcagcagcaatt	351412	768137	-	-	-
6323	ARRHG12	NM.015313.1	10	ttgcttcacacagcagcagcaatt	253948	638302	-	-	-
6324	ARRHG12	NM.015313.1	80	aaacgcagcagcagcagcagcaatt	253950	638304	see also 6323 line	-	-
6325	ARRHG12	NM.015313.1	81	acgcagcagcagcagcagcaatt	253951	638305	see also 6323 line	-	-
6326	ARRHG12	NM.015313.1	84	gaagcagcagcagcagcagcaatt	253952	638306	see also 6323 line	-	-
6327	ARRHG12	NM.015313.1	1208	ttgcttcacacagcagcagcaatt	253978	638323	see also 6323 line	-	-
6328	PUM2	NM.015317.1	97	ttgcttcacacagcagcagcaatt	53719	475081	-	-	-
6329	PUM2	NM.015317.1	326	ttctctctgcagcaattttgatt	53727	475070	see also 6328 line	-	-
6330	PUM2	NM.015317.1	442	aggacacacacagcagcagcaatt	53730	475071	see also 6328 line	-	-
6331	PUM2	NM.015317.1	497	caaggttcacacagcagcagcaatt	53731	475073	see also 6328 line	-	-
6332	PUM2	NM.015317.1	517	ttgcttcacacagcagcagcaatt	53732	475075	see also 6328 line	-	-
6333	PUM2	NM.015317.1	520	atgcgcagcagcagcagcagcaatt	53733	475076	see also 6328 line	-	-
6334	PUM2	NM.015317.1	521	ttgcgcagcagcagcagcagcaatt	53734	475077	see also 6328 line	-	-
6335	PUM2	NM.015317.1	522	ggccttcacacagcagcagcaatt	53735	475078	see also 6328 line	-	-
6336	PUM2	NM.015317.1	564	ggccttcacacagcagcagcaatt	53736	475079	see also 6328 line	-	-
6337	PUM2	NM.015317.1	662	ggccttcacacagcagcagcaatt	53737	475080	see also 6328 line	-	-
6338	PUM2	NM.015317.1	726	aaaccccttcacacagcagcaatt	53740	475083	see also 6328 line	-	-
6339	PUM2	NM.015317.1	728	caatttcacacagcagcagcaatt	53746	475089	see also 6328 line	-	-
6340	PUM2	NM.015317.1	773	ggccttcacacagcagcagcaatt	53748	475092	see also 6328 line	-	-
6341	PUM2	NM.015317.1	1331	ttcagcagcagcagcagcagcaatt	53757	475100	see also 6328 line	-	-
6342	PUM2	NM.015317.1	1744	ttgcgcagcagcagcagcagcaatt	53767	475109	see also 6328 line	-	-

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6343	PUM2	NM_015317.1	1798	ctgcttgatcaaaagatgattg	53769	475111	see also 6328 line
6344	PUM2	NM_015317.1	1832	agcaatcaggacacattttt	53770	475112	see also 6328 line
6345	PUM2	NM_015317.1	1839	agcaatcaggacacattttt	53772	475113	see also 6328 line
6346	PUM2	NM_015317.1	1837	agcaatcaggacacattttt	53773	475114	see also 6328 line
6347	PUM2	NM_015317.1	1869	tctctctcgaattcaaatg	53774	475115	see also 6328 line
6348	PUM2	NM_015317.1	2317	aaagcctctcgaattcaaatg	53790	475129	see also 6328 line
6349	PUM2	NM_015317.1	2403	ggcctctctcgaattcaaatg	53796	475131	see also 6328 line
6350	PUM2	NM_015317.1	2892	agcaatcaggacacattttt	53813	475150	see also 6328 line
6351	PUM2	NM_015317.1	2896	agcaatcaggacacattttt	53814	475151	see also 6328 line
6352	PUM2	NM_015317.1	2927	ccgtctcgaagccttactga	53815	475152	see also 6328 line
6353	PUM2	NM_015317.1	2930	tctctcgaagccttactgag	53817	475153	see also 6328 line
6354	FEM1B	NM_015322.2	862	cccttcgaagccttactgag	248562	634847	receptor activity, -
6355	FEM1B	NM_015322.2	1390	tgggttctctcttgcacatga	248578	634859	apoptosis
6356	FEM1B	NM_015322.2	2350	cccttcgaagccttactgag	248601	634890	see also 6354 line
6357	FEM1B	NM_015322.2	2432	agcaatcaggacacattttt	248603	634891	see also 6354 line
6358	FEM1B	NM_015322.2	2433	agcaatcaggacacattttt	248604	634892	see also 6354 line
6359	KIAA0776	NM_015323.2	118	agcaatcaggacacattttt	351503	722381	-
6360	KIAA0776	NM_015323.2	248	tgggttctctcttgcacatga	351508	722385	see also 6359 line
6361	KIAA0776	NM_015323.2	249	cccttcgaagccttactgag	351509	722386	see also 6359 line
6362	KIAA0776	NM_015323.2	255	tgggttctctcttgcacatga	351510	722388	see also 6359 line
6363	KIAA0776	NM_015323.2	816	cccttcgaagccttactgag	351525	722405	see also 6359 line
6364	KIAA0776	NM_015323.2	817	agcaatcaggacacattttt	351526	722406	see also 6359 line
6365	KIAA0776	NM_015323.2	1626	ggccttcgaagccttactgag	351544	722428	see also 6359 line
6366	KIAA0828	NM_015328.1	1451	tggccttcgaagccttactgag	204320	594613	adenosylhomocyst elase
6367	NCSTN	NM_015331.1	302	ctcaaacgcctctcgaattgg	282513	691583	molecular function unknown
6368	NCSTN	NM_015331.1	2195	atctgcactctctcgaattgg	282558	691516	see also 6367 line
6369	HIP14	NM_015336.1	964	tagtcaactactatctcgaattg	351634	775807	kinase, related
6370	HIP14	NM_015336.1	1146	ccgttcgacacactcgaattg	351639	775814	see also 6369 line
6371	HIP14	NM_015336.1	1190	agcaatcaggacacattttt	351641	775819	see also 6369 line
6372	HIP14	NM_015336.1	1263	agcaatcaggacacattttt	351646	775821	see also 6369 line
6373	HIP14	NM_015336.1	1278	tggctttcaactcgaattg	351647	775824	see also 6369 line
6374	HIP14	NM_015336.1	1721	tggctttcaactcgaattg	351667	775834	see also 6369 line
6375	HIP14	NM_015336.1	1943	agcaatcaggacacattttt	351673	775835	see also 6369 line
6376	HIP14	NM_015336.1	2393	gctatctcaaacctcgaattg	351696	775850	see also 6369 line
6377	HIP14	NM_015336.1	2462	tggctttctcgaattttt	351699	775852	see also 6369 line
6378	ADNP	NM_015339.2	1810	agcaatcaggacacattttt	622	441591	transcription, regulat or
6379	ADNP	NM_015339.2	2175	agcaatcaggacacattttt	641	441611	see also 6378 line
6380	ADNP	NM_015339.2	3536	ggccttcgaagccttactgag	674	441651	see also 6378 line
6381	LARS2	NM_015340.2	720	agcaatcaggacacattttt	88291	768588	leucine-tRNA
6382	LARS2	NM_015340.2	1774	tggcttactcgaattttt	88317	768613	see also 6381 line

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6393	KIAA0073	NM_015342.1	1793	tccaccacgctggctgctg	-	234723	671084	-	-	-	-
6394	KIAA0073	NM_015342.1	1794	accacacgctggctgctata	see also 6393 line	234724	671085	see also 6393 line	-	-	-
6395	KIAA0073	NM_015342.1	1797	accgctgctgctgataaaga	234725	671086	transcription, regulat	-	-	-	-
6396	JJAZ1	NM_015395.1	434	ggctgcacacagcagctgctctcc	300516	666800	or	-	-	-	-
6397	JJAZ1	NM_015395.1	1119	cgctgttttagatgggataatga	300520	666818	see also 6396 line	-	-	-	-
6398	JJAZ1	NM_015395.1	1714	atcgctgcacacgctgctgtttt	300540	666853	see also 6396 line	-	-	-	-
6399	KIAA0092	NM_015380.2	822	accgtggaagtgaatgaagattt	62994	478964	-	-	-	-	-
6399	KIAA0092	NM_015380.2	1064	gtctctcttggtgctgctatctcc	63002	478974	see also 6399 line	-	-	-	-
6391	KIAA0052	NM_015390.2	1068	ttctcttcgctacatctcaantc	63003	478975	see also 6389 line	-	-	-	-
6392	KIAA0052	NM_015390.2	2003	carcttcacatgacacatcgaag	63025	479004	see also 6389 line	-	-	-	-
6393	R3HDM	NM_015361.2	1000	tggattatcacacaaatgtgato	65201	485603	-	-	-	-	-
6394	R3HDM	NM_015361.2	1338	cccacagacagacacaaatgattt	65215	485615	see also 6393 line	-	-	-	-
6395	R3HDM	NM_015361.2	1345	tggcgcgcagatataatgataatg	65218	485617	see also 6393 line	-	-	-	-
6396	R3HDM	NM_015361.2	1809	taccacagcagctgctgctatgac	65239	485822	see also 6393 line	-	-	-	-
6397	AMEECRT	NM_015365.1	631	aacgagcctgcacacacagctttgt	276376	708407	-	-	-	-	-
6398	AMEECRT	NM_015365.1	819	gctctgcctacacacacagcttgag	276390	708417	see also 6397 line	-	-	-	-
6399	AMEECRT	NM_015365.1	1142	gtctctgcctacacacacacattat	276394	708429	see also 6397 line	-	-	-	-
6400	AMEECRT	NM_015365.1	1145	ttccgcacacacacacacattatcc	276395	708430	see also 6397 line	-	-	-	-
6401	UNC84B	NM_015374.1	349	ggaggaatccacacacacacgaagc	120438	810277	-	-	-	-	-
6402	CG-51	NM_015380.3	445	tagacaaagtggatgtgttttgatg	278490	801950	-	-	-	-	-
6403	CG-94	NM_015396.1	1233	ctctctacacacacacagctaatg	269573	650783	-	-	-	-	-
6404	KIAA1892	NM_015397.1	1430	ggagagctctcactgctgtttatgg	352287	727500	-	-	-	-	-
6405	DKFZP664	NM_015420.4	1412	ggagcagcactactctcttgaaaa	352557	813491	-	-	-	-	-
6406	AASDPPP	NM_015423.2	645	tgaactcagctcagatatttttta	352610	723376	-	-	-	-	-
6407	AASDPPP	NM_015423.2	729	tgcctgcgctgctgattttttgact	352615	723381	see also 6408 line	-	-	-	-
6408	POLRI	NM_015425.1	1255	ggccacgcacgaattgattgtttga	36027	466515	or	-	-	-	-
6409	POLRI	NM_015425.1	1256	ggccacgcacgaattgattgtttga	36028	466516	see also 6408 line	-	-	-	-
6410	POLRI	NM_015425.1	2357	cactgcctgatttgcctgctgctatg	36038	466536	see also 6408 line	-	-	-	-
6411	POLRI	NM_015425.1	2633	cagactgatttttaacatgttttga	36043	466540	see also 6408 line	-	-	-	-
6412	POLRI	NM_015425.1	2679	accctatcagacatcagatgaataac	36045	466541	see also 6408 line	-	-	-	-
6413	TARSH	NM_015429.2	639	aagcccaacacagctgtttgaattt	352659	804444	-	-	-	-	-
6414	DKFZP666	NM_015430.1	1190	cagtcacagggagacacacattaca	181885	547701	-	-	-	-	-
6415	RNF19	NM_015435.3	2413	aacacacaaagcagcaactcaagt	113879	705729	transcription, regulat	-	-	-	-
6416	TES-103	NM_015438.1	781	ggcggcgagcgagcagcagctcaagc	352850	804382	or	-	-	-	-
6417	FTH-SOC	NM_015440.3	3163	accagctgaagctgctgctctcttca	83963	502823	-	-	-	-	-
6418	CNOT10	NM_015442.1	510	accacatcaacagctggaagattc	352858	770775	-	-	-	-	-
6419	CNOT10	NM_015442.1	1128	ggatgctgctcttggctgaatgaac	352882	770795	see also 6418 line	-	-	-	-

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6420	CNCT10	NM.015442.1	1132	tgcattcttgcgaataaccttgc	352884	770786	see also 6418 line	transcription_regulat
6421	ELYS	NM.015446.1	2201	tgcacaactccctgaattca	25817	724452	or	-
6422	MTMR9	NM.015456.3	594	cagcttgcacatcatataatg	353242	766959	-	-
6423	MTMR9	NM.015456.3	1668	agctctttgacgctctctgc	353278	759582	see also 6422 line	-
6424	EHZF	NM.015461.1	1913	tcccttgccgcgaattatccc	204627	649021	-	-
6425	SIN3A	NM.015477.1	2491	gggtcttaagagcttactcaatg	300887	669347	or	-
6426	SIN3A	NM.015477.1	2969	cggagctctgcgaattcttgc	300872	669358	see also 6425 line	-
6427	SIN3A	NM.015477.1	3106	acctatgtcttcttcttgaag	300877	669382	see also 6425 line	-
6428	SIN3A	NM.015477.1	3176	acatcagctctctcaaatatga	300878	669383	see also 6425 line	-
6429	PVRL3	NM.015480.1	274	gggaagctctgcgaagaatctc	353435	539470	-	-
6430	PVRL3	NM.015480.1	390	tgacaagaattcttgcataasca	353440	539471	see also 6429 line	-
6431	PVRL3	NM.015480.1	724	agggcgaaatctctgttgtaaa	353454	539484	see also 6429 line	-
6432	PVRL3	NM.015480.1	726	agcgaaatctctgttgtaaaac	353455	539486	see also 6429 line	-
6433	PVRL3	NM.015480.1	1296	agctttctcgaacactcttgc	353477	539505	see also 6429 line	-
6434	PVRL3	NM.015480.1	1392	tctctaccacagcgttgaanaa	353480	539506	see also 6429 line	-
6435	ZNF385	NM.015481.1	766	cgacttgcagcacatacaaaag	56074	476101	or	-
6436	ZNF385	NM.015481.1	770	ttagagcaatcaaaaagtctct	56075	476102	see also 6435 line	-
6437	MR-1	NM.015486.3	418	cccgtctctctcagcaatctca	353508	709926	-	-
6438	DKFZP564	NM.015497.2	788	ctgcgaagatctctctgcgaatc	353601	784096	-	-
6439	DKFZP564	NM.015497.2	882	atccgtatcacaaagagactctgt	353603	784100	see also 6438 line	-
6440	G2022	NM.015497.2	956	ggctcgaacctctgcatacatag	353604	784101	see also 6438 line	-
6441	SH2B	NM.015503.1	3879	tgtgtccactctcatcttgcgat	317233	540373	-	-
6442	TIPARP	NM.015508.2	1921	atgttttgacaagaagacttattt	66809	486846	-	-
6443	TIPARP	NM.015508.2	1957	agctactctctaaactttttctaa	66810	486848	see also 6442 line	-
6444	TIPARP	NM.015508.2	2105	atgactctgttgcgaataatttc	66812	486852	see also 6442 line	-
6445	DKFZP566	NM.015509.2	393	ggggagatctctgcgttctaatt	353630	723229	-	-
6446	GREL1	NM.015513.2	942	ttttgagcttgcgttactttgagg	140956	546607	-	heart disease(心臓疾患)
6447	DKFZP566	NM.015523.1	706	accgaataaactctctcaagaaga	161829	591399	-	-
6448	DKFZP434	NM.015527.2	298	ctgcgaagaagacaaatctatgc	236088	620679	-	-
6449	DKFZP434	NM.015527.2	501	agcctgcgaagactctctactata	236089	620682	see also 6448 line	-
6450	DKFZP434	NM.015527.2	506	ggcagactctctctataagcaag	236091	620683	see also 6448 line	-
6451	DKFZP566	NM.015528.1	681	gtcaatgggtcagcttcttttgc	191334	594760	-	-

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6452	MOXD1	NN_015529.1	624	tggtgcacaaattgaagcttc	163740	500929	-	-	-
6453	MOXD1	NN_015529.1	1209	agagcatcagctctgctcttttc	163750	500938	-	see also 6452 line	-
6454	MOXD1	NN_015529.1	1213	atcagctctgctctgattctgaaa	163751	500940	-	see also 6452 line	-
6455	DKFZF566	NN_015533.2	384	caacgggagggagctcactctgc	208575	598154	-	-	-
6456	DKFZF564	NN_015534.3	487	tcccgatctactctgtttacaag	25160	813056	-	-	-
6457	DKFZF564	NN_015534.3	488	cccgatctactctgtttacaaga	25161	813057	-	see also 6456 line	-
6458	DKFZF564	NN_015534.3	507	agagtaacaactgggttaaacgc	25162	813058	-	see also 6456 line	-
6459	DKFZF564	NN_015534.3	959	aacagctctgctctgactcttata	25171	813064	-	see also 6456 line	-
6460	DNAPT1P6	NN_015535.1	389	ccacatcaagcaacaagaagcttc	353723	754643	-	-	-
6461	THEA	NN_015547.2	1562	aggcgggaagccttggtacaatgc	200091	591732	-	-	-
6462	BPAG1	NN_015548.2	11601	ttcagcatggagattctctaata	115749	522309	-	cell cycle, signal transduction	epidermolysis bullosa (養皮水疱症)
6463	ZNF451	NN_015555.1	737	gtctatactatccagcttacaacg	265982	748345	-	transcription, regulat	-
6464	ZNF451	NN_015555.1	738	tctctataatccctctgttacaagc	265983	748348	-	or	-
6465	SIPAL11	NN_015556.1	627	tgacctatctccagctcaggaatgc	284258	676918	-	see also 6463 line	-
6466	SIPAL11	NN_015556.1	628	agcctctgagcagcaggaatgc	284259	676919	-	-	-
6467	SIPAL11	NN_015556.1	630	ccgttcagcagcaggaatgc	284260	676920	-	see also 6465 line	-
6468	SIPAL11	NN_015556.1	708	tctctgagcagcaggaatgc	284262	676921	-	see also 6465 line	-
6469	SIPAL11	NN_015556.1	1886	caagctctgagcagcaggaatgc	284293	676944	-	see also 6465 line	-
6470	SIPAL11	NN_015556.1	3729	tctctgagcagcaggaatgc	284332	676973	-	see also 6465 line	-
6471	SSI181	NN_015558.3	573	acggtctcagacacacacacac	169898	803922	-	-	-
6472	SSI181	NN_015558.3	577	gtctcagacacacacacacac	169899	803923	-	-	-
6473	OPA1	NN_015560.1	1299	aggaaactattcttgatctcagc	109724	519748	-	apoptosis	optic atrophy (遠近性視神經萎縮症), glaucoma (綠內障)
6474	OPA1	NN_015560.1	2541	atccaaactctgattgaagctact	109760	519784	-	see also 6473 line	-
6475	LRR1M2	NN_015564.1	442	ccctatctctgagcagcaatctg	326940	692545	-	-	-
6476	LRR1M2	NN_015564.1	607	gtccctgagcagcaatctcaca	326944	692550	-	see also 6475 line	-
6477	LRR1M2	NN_015564.1	673	tgtctctcaacttgatctcaca	326947	692555	-	see also 6475 line	-
6478	LRR1M2	NN_015564.1	674	tgtctctcaacttgatctcaca	326948	692556	-	see also 6475 line	-
6479	LRR1M2	NN_015564.1	776	tacttccaacaacacacacttcc	326953	692564	-	see also 6475 line	-
6480	LRR1M2	NN_015564.1	885	tgcagcactctgacttctctcc	326955	692569	-	see also 6475 line	-
6481	LRR1M2	NN_015564.1	1053	accctctcagcaggaattttt	326962	692579	-	see also 6475 line	-
6482	LRR1M2	NN_015564.1	1537	ctgcagcaggaatttttctctca	326984	692580	-	see also 6475 line	-
6483	LRR1M2	NN_015564.1	1537	ctgcagcaggaatttttctctca	326984	692580	-	see also 6475 line	-
6484	LRR1M2	NN_015564.1	1813	ttccaaactctgattctcaca	326989	692592	-	see also 6475 line	-
6485	LRR1M2	NN_015564.1	324	ttccaaactctgattctcaca	326989	692592	-	see also 6475 line	-
6486	KU40820	NN_015569.1	397	tgcagcagcagcagcagcagc	328995	692605	-	see also 6475 line	-
6487	KU40820	NN_015569.1	398	ggcagattctctctctcagagc	109416	518450	-	-	-
6487	KU40820	NN_015569.1	398	ggcagattctctctctcagagc	109417	518451	-	see also 6488 line	-

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6488	INRC15	NM_015575.1	500	ctctctgagctgaattcttca	354113	760278	-	-	-
6489	INRC15	NM_015575.1	3470	ggctctctacccgcatatgag	354168	760332	see also 6488 line	-	-
6490	INRC15	NM_015575.1	3474	ggctctctacccgcatatgag	354168	760333	see also 6488 line	-	-
6491	INRC15	NM_015575.1	3584	agcctctaatagcgaataaac	354171	760337	see also 6488 line	-	-
6492	INRC15	NM_015575.1	3585	ggcctctaatagcgaataaac	354172	760338	see also 6488 line	-	-
6493	INRC15	NM_015575.1	3587	ggcctctaatagcgaataaac	354173	760339	see also 6488 line	-	-
6494	INRC15	NM_015575.1	3677	ggcctctaatagcgaataaac	354177	760345	see also 6488 line	-	-
6495	INRC15	NM_015575.1	3962	tcctctctgcatctgaattctt	354183	760352	see also 6488 line	-	-
6496	CAS1	NM_015576.1	2766	ttgcctctctgcatctgaattct	354226	759418	-	-	-
6497	PDP38	NM_015584.2	316	ctgcctctgcatctgaattct	354330	724681	-	-	-
6498	PDP38	NM_015584.2	384	ctgcctctgcatctgaattct	354333	724665	see also 6497 line	-	-
6499	PGN3	NM_015593.1	947	acgttataatagcattctctaa	234972	619884	phosphoacetylgluc osamine mutase	-	-
6500	PGN3	NM_015593.1	1410	caagcagaagcttatgaacct	234993	619697	see also 6499 line	-	-
6501	C20orf22	NM_015600.2	919	tccagatgcccttatggtaat	235970	621268	-	-	-
6502	DKFZP564	NM_015601.2	596	caagatgccccaataattaaaa	228158	614980	-	-	-
6503	DKFZP564	NM_015601.2	812	aggaagaagcccatagtttgaac	228170	614990	see also 6502 line	-	-
6504	DKFZP564	NM_015601.2	904	atgtaggtatgtcttcaatttta	228174	614996	see also 6502 line	-	-
6505	DKFZP564	NM_015601.2	909	aggtatgtcttcaatttactaaa	228176	614997	see also 6502 line	-	-
6506	DKFZP547	NM_015607.2	749	ctccccaatggctcttaagaagaag	354479	713044	-	-	-
6507	DKFZP547	NM_015607.2	751	ctccccaatggctcttaagaagaag	354480	713045	see also 6506 line	-	-
6508	DKFZP566	NM_015609.1	78	caagcagcagaataatccaaatct	354587	785151	-	-	-
6509	DKFZP434	NM_015610.1	346	gtccctgactctgtttgtgtaagt	354590	801464	-	-	-
6510	DKFZP566	NM_015630.2	253	ggcgaagaagaacgctcaactatt	354639	777132	-	-	-
6511	DKFZP566	NM_015630.2	259	ggcgaagaagaacgctcaactatt	354640	777134	see also 6510 line	-	-
6512	DKFZP566	NM_015630.2	344	ggcgaagaagaacgctcaactatt	354641	777137	see also 6510 line	-	-
6513	DKFZP566	NM_015630.2	476	caagcttctaacctcttaagaagc	354643	777145	see also 6510 line	-	-
6514	DKFZP566	NM_015630.2	886	tagctgaagaagaagctctatg	354680	777156	see also 6510 line	-	-
6515	DKFZP566	NM_015630.2	1000	tctctgtaggtctgtcaaaaaga	354683	777158	see also 6510 line	-	-

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6516	DKFZP566 F2124	NM_015830.2	1088	ttgcctgtgatacaataagatga	354865	777160	see also 6510 line	
6517	DKFZP566 F2124	NM_015830.2	1225	gcctggcagagagcagatattatg	354669	777162	see also 6510 line	
6518	DKFZP566 F2124	NM_015830.2	1546	tgcgctgtctctcttgaaatat	354683	777173	see also 6510 line	
6519	DKFZP566 F2124	NM_015830.2	1883	aggacctctgcgctgtgtcttaa	354692	777185	see also 6510 line	
6520	DKFZP566 F2124	NM_015830.2	1885	caactctgcctgtatctcaaaa	354693	777188	see also 6510 line	
6521	DKFZP566 F2124	NM_015830.2	1886	acctctgactgtgtcttaaac	354694	777187	see also 6510 line	
6522	DKFZP566 F2124	NM_015830.2	2275	accatgcgcaacagcttaaac	354704	777196	see also 6510 line	
6523	DKFZP566 F2124	NM_015830.2	2278	atcgcaacagccttaaaccttg	354705	777197	see also 6510 line	
6524	D116	NM_015831.1	1040	atgcttctctctataaactc	354723	723176	-	-
6525	E1F9B4	NM_015838.2	513	aggtctctccacaaagatgat	56365	476463	-	translation initiation factor
6526	TRPC-A1P	NM_015838.1	450	ctctatctccgggacgaactga	103239	516733	-	-
6527	TRPC-A1P	NM_015838.1	600	asgaagaagagctctctcaaa	103264	516738	see also 6526 line	-
6528	TRPC-A1P	NM_015838.1	691	cagctctctgctgctcaatt	103269	516743	see also 6526 line	-
6529	TRPC-A1P	NM_015838.1	696	tctctgctgacaaactcgatc	103270	516745	see also 6526 line	-
6530	TRPC-A1P	NM_015838.1	793	ccacagctctctgccaataatgc	103272	516749	see also 6526 line	-
6531	TRPC-A1P	NM_015838.1	1787	atgcattcaagaatctcaataaa	103290	516763	see also 6526 line	-
6532	ZNF288	NM_015842.1	2420	ctcctgctgcccagcaaatgtg	45011	470744	transcription_regulat	-
6533	ZNF288	NM_015842.1	2421	tccctctgccacacaagttaga	45012	470745	or	-
6534	ABCA12	NM_015857.3	660	cagctctgctgacacatgacatg	68131	786512	see also 6532 line	-
6535	ABCA12	NM_015857.3	1455	aggcaaccacacacaagatgtttt	68166	786544	see also 6534 line	-
6536	AAAS	NM_015865.3	1147	gccgaactctcttctactgtatg	276335	769490	molecular_function	-
6537	XTP13PB	NM_015701.2	1197	tctctctatgcaacacatgtaca	355180	718559	unknown	-
6538	XTP13PB	NM_015701.2	1417	aggctgactctaaacaaatgctc	355184	718568	see also 6537 line	-
6539	O.2	NM_015705.3	1048	tgcgcactctggagcctgttttc	355218	750709	-	-
6540	MINX	NM_015716.2	4059	acgcaactctacacagcagctg	297659	507581	kinase_related	-
6541	NOX3	NM_015718.1	1655	tcaaagcagatgctctcaataca	227200	813293	-	-
6542	X326	NM_015726.2	1324	gccatctctgtctgctcaacc	355241	770429	DNA_binding	-
6543	X326	NM_015726.2	1743	ggagcgcgaacgaacatcaacc	355250	770434	see also 6542 line	-
6544	X326	NM_015726.2	1480	caagaaaggctgcaattctat	355252	770437	see also 6542 line	-
6545	MBD1	NM_015845.2	1135	ctgctgcgaagaagcaaatctcg	6345	451385	transcription_regulat	-
						or	-	-

5546	C6orf52	NM_015864.2	530	cgaggtgaactctcttcattgaa	355292	802498	—	—	—	transcription regulator
5547	ZT88	NM_015871.2	300	ccgactccaaagccacaaagaa	48005	453549	—	—	—	transcription regulator
5548	OAZIN	NM_015878.3	1453	ttgaagagtgtaactatcattgtt	236972	622404	—	—	—	—
5549	OAZIN	NM_015878.3	1457	aagatgaatactctcttttcagc	236974	622405	see also 6548 line	—	—	—
5550	OAZIN	NM_015878.3	1841	atcttggagcttgccttctcttctt	236984	622415	see also 6548 line	—	—	—
5551	OAZIN	NM_015878.3	1843	gttggagcttgccttctcttcttga	236985	622416	see also 6548 line	—	—	—
5552	SIAT8C	NM_015879.1	2302	ttggcaaacagctttttctacaa	213030	600889	—	—	—	—
5553	SIAT8C	NM_015879.1	2334	tttcacagcacttgcctgactaa	213031	600891	see also 6552 line	—	—	—
5554	SIAT8C	NM_015879.1	2339	caacagctctgcgtatgactaa	213032	600893	see also 6552 line	—	—	—
5555	SIAT8C	NM_015879.1	2340	actctctgcgtatgactaa	213033	600894	see also 6552 line	—	—	—
5556	SIAT8C	NM_015879.1	2959	atgttcagctctgcctctgtatg	213052	600914	see also 6552 line	—	—	—
5557	MTFPS2	NM_015884.1	630	agcactatctatggagcagcttc	157701	558180	—	—	—	zinc binding
5558	MTFPS2	NM_015884.1	740	catcagcagcagcagcagcttc	157704	558188	see also 6557 line	—	—	—
5559	MTFPS2	NM_015884.1	745	cagcagcagcagcagcagcttc	157715	558187	see also 6557 line	—	—	—
5560	MTFPS2	NM_015884.1	1057	ttccagctatgagctatcaaacg	157714	558202	see also 6557 line	—	—	—
5561	PI15	NM_015886.1	898	ttgttcacacccctgtatgtgta	292786	695400	—	—	—	—
5562	HOOK1	NM_015888.3	343	ctctctcagcagctcaaacagc	355302	685025	—	—	—	—
5563	HOOK1	NM_015888.3	380	gccatgctcaacagctctctatca	355303	685028	see also 6562 line	—	—	—
5564	HOOK1	NM_015888.3	430	ttgtttgaagccagatcaaacagg	355307	685029	see also 6562 line	—	—	—
5565	HOOK1	NM_015888.3	1042	cagcctcaacagctcccaagctg	355328	685041	see also 6562 line	—	—	—
5566	ARS2	NM_015908.3	1636	tcagacacagctctcaactaa	276983	687120	—	—	—	—
5567	LTPI9	NM_015913.2	534	ctccatcaattttttgtatga	265878	647804	—	—	—	—
5568	LOC51081	NM_015914.2	618	ctgttcctatgcagctttttgacc	265345	647791	—	—	—	—
5569	LOC51081	NM_015914.2	629	gactttgcagcagcagcagcagc	265346	647793	see also 6568 line	—	—	—
5570	SPG4A	NM_015915.2	1575	ttgtttgagcagcagcagcagc	40908	468191	—	—	—	spastic paraplegia (dominant for麻痺)
5571	C6orf42	NM_015921.1	538	cttgagctctctgtatgactgaa	355491	647597	—	—	—	—
5572	H105E3	NM_015922.1	537	gagctctcttttttgactgaatta	219912	607298	—	—	—	3-beta-hydroxy-delta(5)-steroid dehydrogenase
5573	LISCH7	NM_015925.3	2078	ttgctctctgactgcgaagcttta	227043	614352	receptor activity	—	—	—
5574	LISCH7	NM_015925.3	2079	ggcctctgactgcgaagcttta	227044	614353	see also 6573 line	—	—	—
5575	LISCH7	NM_015925.3	2080	gcccttgctgcgaagcttta	227045	614354	see also 6573 line	—	—	—
5576	NOPE/NO	NM_015934.3	1484	ctttctcaaaaacacaaatag	180325	472567	—	—	—	snRNP binding
5577	GQI-07	NM_015938.2	851	ctttgaaatttctcaatctgac	264381	648755	—	—	—	—
5578	GQI-07	NM_015938.2	860	ttcttcacactcagcagctatgc	264392	648757	see also 6577 line	—	—	—
5579	GQI-07	NM_015938.2	1283	ttccacactcagcagcagctatgc	264390	648770	see also 6577 line	—	—	—
5580	GQI-07	NM_015938.2	1538	atgaaagctgcagcagcagctatgc	264396	648776	see also 6577 line	—	—	—
5581	GQI-07	NM_015938.2	1542	agagcagcagcagcagcagc	264397	648777	see also 6577 line	—	—	—
5582	ATP8V1H	NM_015941.1	699	atggagcagcagcagcagcagc	73368	494937	—	—	—	hydrogen-translocating V-type ATPase
5583	ATP8V1H	NM_015941.1	700	ttgaagcagcagcagcagcagc	73369	494938	see also 6582 line	—	—	—

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6584	ATP6VH1	NM.015941.1	704	aggcagctactaaataactatt	73370	494939	see also 6582 line
6585	ATP6VH1	NM.015941.1	982	tgcactatgcgtccaaagatgt	173580	494953	see also 6582 line
6586	CG-14	NM.015944.2	244	cagatcaagcagtgagttatgtgt	191321	583771	-
6587	SLC35B3	NM.015944.2	710	tatgcagctatgctttactcttc	355567	750516	-
6588	CG-26	NM.015954.1	704	atgacagatgcagattttataa	233987	618329	-
6589	MMRP19	NM.015957.1	414	ggatcatatcacccctcaagc	355609	709093	-
6590	MRP57	NM.015971.2	320	atctcttgatgaagaagaat	286131	658908	-
6591	CAMK2A	NM.015981.2	1141	gtccatttcagcttgatattaa	74973	496980	kinase related
6592	CAMK2A	NM.015981.2	1144	cagttccatgcctcagttatg	74974	496981	see also 6591 line
6593	CAMK2A	NM.015981.2	1147	tccagcgttcagttatggaat	74975	496982	see also 6591 line
6594	CAMK2A	NM.015981.2	1148	tccagcgttcagttatggaat	74976	496983	see also 6591 line
6595	UCHL5	NM.015984.1	270	aggcagctcatgctgtatgttt	190723	584236	ubiquitin C-terminal hydrolase
6596	CRU3	NM.015986.2	676	gtctgcagctccagaagaata	248113	634637	-
6597	CG-41	NM.015991.2	717	atgcacacatcaggaatttctc	355706	770517	-
6598	CGI-41	NM.015991.2	718	tccacatcatgaatttttcca	355707	770518	see also 6597 line
6599	CGI-41	NM.015991.2	968	accagcagctccgcagtaacagc	355709	770519	see also 6597 line
6600	ADIPOR1	NM.015994.2	791	gtctccagagcttttccaaatg	325963	691456	receptor activity
6601	ADIPOR1	NM.015994.2	1033	gtccacacgcagttttactatg	325968	691459	see also 6600 line
6602	TRMT1	NM.016000.2	598	atctatcatataatttatgttt	355273	475968	-
6603	C20orf9	NM.016004.1	93	gagctgcagagatccatctttt	355783	771676	-
6604	C20orf9	NM.016004.1	95	agctgcagagatccatctttt	355784	771677	see also 6603 line
6605	C20orf9	NM.016004.1	99	tgcagatccatcttttcaat	355785	771678	see also 6603 line
6606	C20orf9	NM.016004.1	363	tggatcatgatttatgaatg	355789	771688	see also 6603 line
6607	C20orf9	NM.016004.1	638	tggctttcatctcatcaagaac	355795	771696	see also 6603 line
6608	SH3GLB1	NM.016009.2	227	ctgaatgtccacaataatgaca	355827	708314	apoptosis
6609	SH3GLB1	NM.016009.2	794	atgcacagctttacagttatg	355838	708328	see also 6608 line
6610	CGI-62	NM.016010.1	479	aaacacagcagcagcagttatg	355859	782795	-
6611	CGI-62	NM.016010.1	482	aaacagcagcagcagttatg	355860	782796	see also 6610 line
6612	CGI-62	NM.016010.1	484	cagcagcagcagttatgaaga	355861	782797	see also 6610 line
6613	CGI-62	NM.016010.1	1005	atgtgcttcaggaagatgato	355877	782824	see also 6610 line
6614	QIA30	NM.016013.1	960	acagatgtccatccatcaact	299273	668592	binding
6615	CGI-67	NM.016014.1	992	aaacacaaagcagcagagattg	236064	760138	-
6616	CGI-67	NM.016014.1	992	tggcctgaagatgaatcattg	236067	760154	see also 6615 line
6617	LCU7L2	NM.016018.1	69	aaacttcacagatgaacttca	355882	752521	-
6618	LCU7L2	NM.016018.1	71	ctcttcacagatgaacttca	355883	752522	see also 6617 line
6619	LCU7L2	NM.016018.1	640	gtccatccagatgaattttgaat	355891	752540	see also 6617 line
6620	LCU7L2	NM.016018.1	1105	ggatccatgaagatgaactg	355896	752550	see also 6617 line
6621	TFEBM1	NM.016020.1	506	cggtccatgaagatgaactg	213910	603931	-
6622	UBE2J1	NM.016021.2	432	ggatccatgaagatgaactg	231200	616469	-
6623	UBE2J1	NM.016021.2	705	gagccatgaagatgaactg	231212	616660	see also 6622 line
6624	UBE2J1	NM.016021.2	1230	ctcttatctatccagcagaatg	231229	616672	see also 6622 line
6625	DREV1	NM.016025.2	379	aaagacacacagatcttcaac	355939	712001	-
6626	RDH11	NM.016026.2	589	aaagatccatccatcaactgc	227333	614627	-

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6627	CGI-83	NM.016021.1	559	aagcctctatagattatgac	355972	755076	-	-	-
6628	CGI-85	NM.016028.3	886	tggatttctgcgaacttcca	356002	754929	-	-	-
6629	CGI-85	NM.016028.3	913	tggaggagacgacttactaga	356002	754930	see also 6628 line	-	-
6630	CGI-85	NM.016028.3	915	gagagaaacactgctactaacga	356003	754931	see also 6628 line	-	-
6631	CGI-85	NM.016028.3	1047	gtgcaacgtctgcgactacgc	356009	754934	see also 6628 line	-	-
6632	CGI-90	NM.016033.1	674	acctaaagctactactaat	356046	716677	-	-	-
6633	CGI-90	NM.016033.1	675	ccctaaagctactactaatc	356047	716678	see also 6632 line	-	-
6634	CGI-90	NM.016033.1	692	tccctctttagattttgttc	356048	716679	see also 6632 line	-	-
6635	CGI-100	NM.016040.2	605	aagtcgaactgaacaaatfag	328452	744259	protein carrier	-	-
6636	F-LANA	NM.016041.2	104	ccgcgttcactgttgatgctc	328452	744260	see also 6636 line	-	-
6637	F-LANA	NM.016041.2	104	ccgcgttcactgttgatgctc	30148	472722	-	-	-
6638	CSL4	NM.016043.2	329	gggaatatgaacacttattgca	53153	472591	protein binding	-	-
6639	P14	NM.016047.2	329	gggaatatgaacacttattgca	53153	472591	-	-	-
6640	P14	NM.016047.2	336	atggacattcgtcaaatcaga	53154	472592	see also 6639 line	-	-
6641	O14orf122	NM.016049.3	465	ctagcaaatctcgaaattcttc	277452	666631	molecular function	-	-
6642	CGI-116	NM.016053.1	150	ctgcaacaggttcgaactttcca	356116	721201	unknown	-	-
6643	CGI-118	NM.016053.1	152	gacacaggttcgaactttcaac	356117	721202	see also 6642 line	-	-
6644	CGI-118	NM.016053.1	159	atgccctctttcaacgaagaag	356118	721204	see also 6642 line	-	-
6645	MRPL48	NM.016055.3	534	tggggagcagatttgaattatg	238956	727173	-	-	-
6646	CGI-125	NM.016060.1	142	tgggaatttgcgaattttgac	356135	72169	transcription_regulat	-	-
6647	CGI-125	NM.016060.1	189	tggccaaagaggttactctaaag	356140	721193	or	-	-
6648	CGI-125	NM.016060.1	190	gcccacaaaggttactctaaag	356141	721194	see also 6648 line	-	-
6649	CGI-141	NM.016072.2	313	aggcatgctctcgaaattatg	305507	673298	kinase related	-	-
6650	CGI-141	NM.016072.2	314	ggcatgctctcgaaattatg	305508	673299	see also 6649 line	-	-
6651	CGI-141	NM.016072.2	317	atgattctcgaaattatgatt	305509	673300	see also 6649 line	-	-
6652	O13orf9	NM.016075.1	637	aagatgcaacattcaagttaa	356196	729007	-	-	-
6653	CDK5RAP	NM.016082.3	952	ggcttaccacacactataaac	356231	529098	kinase related	-	-
6654	CNR1	NM.016083.3	510	caggctctccactcactcatcg	238961	624016	-	-	-
6655	CNR1	NM.016083.3	595	cacgtttttccocccaagaatag	238963	624019	see also 6654 line	-	-
6656	CNR1	NM.016083.3	596	acgctttccacccaagaataga	238964	624020	see also 6654 line	-	-
6657	RNMT	NM.016090.2	625	ttccctctcaatgataacatt	54081	478332	RNA binding	-	-
6658	E1F3SAP	NM.016091.1	1193	acctccactcagaatagaatt	56778	535060	-	-	-
6659	LOC51122	NM.016094.1	216	caacatctgttgagagatgaac	356261	765410	-	-	-
6660	NAT5	NM.016100.2	162	tggatctctctcgaagaactta	215173	602219	-	-	-
6661	NAT5	NM.016100.2	163	tggatctctctcgaagaactta	215174	602220	see also 6660 line	-	-
6662	NAT5	NM.016100.2	371	tgcbaacttgcgacttactacg	213185	602231	see also 6660 line	-	-
6663	FRBP7	NM.016103.2	389	caaccacaaatggtttcttgg	145172	548700	-	-	-
6664	ZFR	NM.016107.3	287	caagtcagctctcaacaaactc	55955	476106	-	-	-
6665	ZFR	NM.016107.3	823	ctgagatgtctcaactcaatcac	55967	476118	see also 6664 line	-	-
6666	ZFR	NM.016107.3	1103	tggccacacgcttataagaac	55873	476123	see also 6664 line	-	-
6667	ZFR	NM.016107.3	1360	tgttgagccaagcttcttcca	55880	476131	see also 6664 line	-	-

alcoholism(アルコール依存症、Parkinson disease(パーキンソン病))

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6668	ZFR	NM_016107.3	2679	ctgcaatctccaaattctctgaga	55006	476174	see also 6664 line	-	-
6669	PKO2L1	NM_016112.2	933	tcccaatctctctctctctctg	150726	542387	channel	-	polycystic kidney disease (多襄性腎臟病)
6670	PKO2L1	NM_016112.2	1295	actctgctctggtctctctctg	150743	544402	see also 6669 line	-	-
6671	ASB3	NM_016115.3	919	atctgctgctctctctctctct	315536	690359	-	-	molecular function unknown
6672	NYREN18	NM_016118.3	139	actcttgagaaactccactataca	282665	706430	-	-	-
6673	NYREN18	NM_016118.3	1048	gactctggaacataaagaabaat	282689	706450	transcription_regulat	-	-
6674	RNF12	NM_016120.2	1188	aaagctctctctctgagaaatctc	113260	669264	see also 6672 line	-	-
6675	RNF12	NM_016120.2	1419	gaccactgttaagcagataatga	113268	669276	see also 6674 line	-	-
6676	NY-REN-	NM_016122.1	1417	aggtatctgaattatctctctctaa	356314	740832	-	-	-
6677	LOC51136	NM_016125.2	494	ctcgaatctcctctctctctctca	356329	740589	-	-	-
6678	LOC51136	NM_016125.2	595	tgtgaattgctgctgtctctcaact	356335	740573	see also 6677 line	-	-
6679	MGC8721	NM_016127.3	370	gtctctctgagacaaactatgac	356353	724975	-	-	-
6680	COPS4	NM_016129.2	184	ggacgctctctctctaaagctctg	356374	703915	-	-	-
6681	COPS4	NM_016129.2	438	aggagcaagctctctctctcaatga	356379	703926	see also 6680 line	-	-
6682	COPS4	NM_016129.2	440	ggacgaagctctctctctctcaatga	356380	703927	see also 6680 line	-	-
6683	COPS4	NM_016129.2	767	ggctctctctctctctctctctcaatg	356390	703940	see also 6680 line	-	-
6684	RAB10	NM_016131.2	520	ggctctgacctctctctctctcaagc	37221	519842	-	-	protein transporter
6685	RAB10	NM_016131.2	572	agacctctctctctctctctctctt	37223	519844	see also 6684 line	-	-
6686	RAB10	NM_016131.2	714	agggatttcaaacctctctcaacc	37229	519848	see also 6684 line	-	-
6687	RAB10	NM_016131.2	969	aaagcaatataaacatctgaaag	37239	519855	see also 6684 line	-	-
6688	MYEF2	NM_016132.2	1292	tgatgacatgagcggagattttg	359	495201	transcription_regulat	-	-
6689	MYEF2	NM_016132.2	1366	ggattttcggaaggaactgagtc	364	495209	or	-	-
6690	DNGLI1	NM_016141.1	205	acagagacagagagaaactcttgg	106709	519103	see also 6688 line	-	-
6691	DNGLI1	NM_016141.1	541	agccttgagcctcttggtctctct	106720	519108	signal transduction	-	-
6692	DNGLI1	NM_016141.1	816	aaagtgtgagctctctctctctctt	106728	519109	see also 6690 line	-	-
6693	NSFLIC	NM_016143.3	1546	agctacacagacctctctctctg	356448	812820	-	-	-
6694	PTD002	NM_016144.2	258	tgcacagcagctgctctctcaat	356466	801263	-	-	-
6695	PME-1	NM_016147.1	949	tccataacctctggaattgtaac	237150	594505	phosphatase	-	-
6696	PIAS1	NM_016166.1	98	tggcggcagctctcggaactaaag	35067	463579	transcription_regulat	-	-
6697	PIAS1	NM_016166.1	99	ggcgagcagctctcggaactaaag	35068	463580	or	-	-
6698	PIAS1	NM_016166.1	103	ggcagctctcggaactaaagcaatg	35068	463581	see also 6696 line	-	-
6699	PIAS1	NM_016166.1	105	caatctcggaactaaagcaatg	35070	463582	see also 6696 line	-	-
6700	PIAS1	NM_016166.1	108	tgcggaactaaagcaatgta	35071	463583	see also 6696 line	-	-
6701	PIAS1	NM_016166.1	189	ggcagctctcggaactaaagta	35074	463585	see also 6696 line	-	-
6702	PIAS1	NM_016166.1	850	tggatctctctcggaactaaatg	35099	463591	see also 6696 line	-	-
6703	PIAS1	NM_016166.1	931	tccatgctctctctctctctctct	35097	463607	see also 6696 line	-	-
6704	PIAS1	NM_016166.1	1003	aggactctgctctctctctctctg	35098	463610	see also 6696 line	-	-
6705	PIAS1	NM_016166.1	1013	gcaatctctgctctctctctctg	35100	463612	see also 6696 line	-	-
6706	PIAS1	NM_016166.1	1239	tccatggaactctctctctctg	35108	463615	see also 6696 line	-	-

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6707	PIAS1	NM_016166.1	1746	aggagacacatcagcattacacaa	35724	463631	see also 6806 line	receptor_activity, channel	store-operated calcium channel	-
6708	TRPC4	NM_016179.1	233	tgtctctcagctctatcaaaaaga	292050	645438	see also 6708 line	-	-	-
6709	TRPC4	NM_016179.1	743	ccacagagatcgctctcaactgt	292070	645448	see also 6708 line	-	-	-
6710	TRPC4	NM_016179.1	745	cacagagatcgctctcaactgt	292071	645449	see also 6708 line	-	-	-
6711	TRPC4	NM_016179.1	1104	ggcccttaagctaccgtcaaaaag	292079	645457	see also 6708 line	-	-	-
6712	TRPC4	NM_016179.1	1111	aaagctacgtcaaaaagattgtt	292080	645459	see also 6708 line	-	-	-
6713	TRPC4	NM_016179.1	1287	aggccactctcagctctcaactca	292086	645462	see also 6708 line	-	-	-
6714	ACTL6	NM_016188.3	314	gtcatgtccgccctcgaagtgaac	276358	531595	-	-	-	-
6715	ACTL6	NM_016188.3	482	agttgcagcagctacacacattcc	276359	531596	see also 6714 line	-	-	-
6716	ACTL6	NM_016188.3	811	ctgcctaaactacactgaattg	276362	531602	see also 6714 line	-	-	-
6717	TIMEFF2	NM_016192.2	1068	gtcgtgtcaagatgaacacacact	284855	663440	-	-	-	-
6718	LSN8	NM_016200.2	145	aaagttttgcccaaacacattaat	46358	749226	-	-	-	-
6719	PRKAG2	NM_016203.2	883	atgaggtcccaacagttttaba	283148	756144	-	-	-	-
6720	PRKAG2	NM_016203.2	885	gggtccacccaaagttttgaaaca	283149	756145	see also 6719 line	-	-	-
6721	PRKAG2	NM_016203.2	888	gtctctcaagctgctgacacagc	283150	756146	see also 6719 line	-	-	-
6722	PRKAG2	NM_016203.2	1194	aaagctcttgatgctgctgatact	283159	756158	see also 6719 line	-	-	-
6723	GDF2	NM_016204.1	606	ctggctctcgctctgctgctctcc	188575	565923	-	-	-	-
6724	TRP4	NM_016213.2	1165	gcttttctgcttctgctgaaatc	112879	638291	-	-	-	-
6725	DCMT4	NM_016221.2	941	cagaagtgagatcatcatcatt	322468	723191	-	-	-	-
6726	DCMT4	NM_016221.2	982	ttcccaaccttgctcatcatgaag	322469	723192	see also 6725 line	-	-	-
6727	DDX41	NM_016222.2	1147	ggccacactcgcaagaagattcca	50801	483145	apoptosis	-	-	-
6728	DDX41	NM_016222.2	1149	caccatcgccgaagaagattcca	50802	483146	see also 6727 line	-	-	-
6729	SNX9	NM_016224.3	1056	ggctgtctctcttgaaagtttgg	252881	652820	-	-	-	-
6730	SNX9	NM_016224.3	1839	cacagctaacgcagctcatgatta	252899	652841	see also 6729 line	-	-	-
6731	SNX9	NM_016224.3	1841	catgaacgcagctcatgattaca	252900	652842	see also 6729 line	-	-	-
6732	SNX9	NM_016224.3	1846	accggtcatcgtgattacaact	252901	652843	see also 6729 line	-	-	-
6733	NLK	NM_016231.1	754	gggtcttcggaactgaagaatg	94811	510342	kinase related, transcription regulat	-	-	-
6734	NLK	NM_016231.1	760	tccagaaatgaagattgtttgt	94812	510343	see also 6733 line	-	-	-
6735	NLK	NM_016231.1	1084	baagaaatgaagattgtttgt	94819	510365	see also 6733 line	-	-	-
6736	NLK	NM_016231.1	1156	ggcctaatcaacgaagttgct	94820	510367	see also 6733 line	-	-	-
6737	NLK	NM_016231.1	1157	caactctcaacgaagttgct	94821	510368	see also 6733 line	-	-	-
6738	NLK	NM_016231.1	1630	ctgctgacagctggaagaagatt	94839	510366	see also 6733 line	-	-	-
6739	ANAPC5	NM_016231.3	259	tgtctgaaagccgcagatattaca	221586	711897	cell cycle	-	-	-
6740	ANAPC5	NM_016231.3	261	ctcgagagccgcagatattaca	221587	711898	see also 6739 line	-	-	-
6741	ANAPC5	NM_016231.3	321	ttcagctgagccgcagatattaca	221588	711900	see also 6739 line	-	-	-
6742	ANAPC5	NM_016231.3	993	cactgcgcctgctgctacataac	221599	711919	see also 6739 line	-	-	-
6743	ANAPC5	NM_016231.3	990	tgcctgctgctgctacataac	221601	711920	see also 6739 line	-	-	-
6744	ANAPC7	NM_016238.1	377	atgagttcccttcaagacaaga	307029	709322	cell cycle	-	-	-

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6745	ANAPC7	NM_016238.1	666	gcacattcttccatagacaa	307038	709328	see also 6744 line		
6746	MYO15A	NM_016239.2	4997	gcacatccgaagctctttatg	92663	590351	—	structural molecule (deafness)	(H)
6747	MYO15A	NM_016239.2	4998	gcacatccgaagctctttatg	92664	590352	see also 6746 line		
6748	MYO15A	NM_016239.2	289	gcacatccgaagctctttatg	92665	590353	—		
6749	SCAR3	NM_016240.2	213	gcgcctgcgaagcaactctct	243119	776381	receptor activity		
6750	SCAR3	NM_016240.2	213	gcgcctgcgaagcaactctct	243120	776382	see also 6748 line		
6751	SCAR3	NM_016240.2	1478	gcgcctgcgaagcaactctct	243134	776384	see also 6748 line		
6752	IMP2	NM_016241.1	3234	gcgcctgcgaagcaactctct	178141	785081	—		
6753	IMP2	NM_016241.1	3379	gcgcctgcgaagcaactctct	178143	785087	see also 6751 line		
6754	NDRG2	NM_016250.1	446	gcgcctgcgaagcaactctct	282566	684281	—	molecular function	
6755	NDRG2	NM_016250.1	449	gcgcctgcgaagcaactctct	282567	684283	unknown		
6756	BIRC6	NM_016252.1	610	gcgcctgcgaagcaactctct	232589	615895	apoptosis		
6757	BIRC6	NM_016252.1	1418	gcgcctgcgaagcaactctct	232609	615908	see also 6755 line	ubiquitin	
6758	BIRC6	NM_016252.1	1619	gcgcctgcgaagcaactctct	232616	615815	see also 6755 line	conjugating	
6759	BIRC6	NM_016252.1	1622	gcgcctgcgaagcaactctct	232617	615816	see also 6755 line		
6760	BIRC6	NM_016252.1	1649	gcgcctgcgaagcaactctct	232618	615819	see also 6755 line		
6761	BIRC6	NM_016252.1	1654	gcgcctgcgaagcaactctct	232619	615820	see also 6755 line		
6762	BIRC6	NM_016252.1	2282	gcgcctgcgaagcaactctct	232640	615837	see also 6755 line		
6763	BIRC6	NM_016252.1	3530	gcgcctgcgaagcaactctct	232659	615676	see also 6755 line		
6764	BIRC6	NM_016252.1	3531	gcgcctgcgaagcaactctct	232670	615677	see also 6755 line		
6765	BIRC6	NM_016252.1	4136	gcgcctgcgaagcaactctct	232689	615669	see also 6755 line		
6766	BIRC6	NM_016252.1	5763	gcgcctgcgaagcaactctct	232738	615744	see also 6755 line		
6767	BIRC6	NM_016252.1	6883	gcgcctgcgaagcaactctct	232763	615784	see also 6755 line		
6768	BIRC6	NM_016252.1	8660	gcgcctgcgaagcaactctct	232832	615828	see also 6755 line		
6769	BIRC6	NM_016252.1	8925	gcgcctgcgaagcaactctct	232836	615840	see also 6755 line		
6770	BIRC6	NM_016252.1	9132	gcgcctgcgaagcaactctct	232845	615849	see also 6755 line		
6771	BIRC6	NM_016252.1	9274	gcgcctgcgaagcaactctct	232852	615853	see also 6755 line		
6772	BIRC6	NM_016252.1	9900	gcgcctgcgaagcaactctct	232870	615873	see also 6755 line		
6773	BIRC6	NM_016252.1	10647	gcgcctgcgaagcaactctct	232897	615911	see also 6755 line		
6774	BIRC6	NM_016252.1	12145	gcgcctgcgaagcaactctct	232943	615953	see also 6755 line		
6775	ZNFN1A2	NM_016260.1	12840	gcgcctgcgaagcaactctct	232967	615967	see also 6755 line	transcription regulator	
6776	ZNFN1A2	NM_016260.1	404	gcgcctgcgaagcaactctct	45966	702968	or	translation	
6777	ZNFN1A2	NM_016260.1	484	gcgcctgcgaagcaactctct	45969	702987	see also 6775 line	regulator	
6778	ZNFN1A2	NM_016260.1	486	gcgcctgcgaagcaactctct	45970	702988	see also 6775 line		
6779	AK3L1	NM_016260.1	1228	gcgcctgcgaagcaactctct	45988	703001	see also 6775 line		
6780	AK3L1	NM_016260.1	486	gcgcctgcgaagcaactctct	71911	493631	kinase-related	adenylate kinase	
6781	KIAA1007	NM_016284.2	4147	gcgcctgcgaagcaactctct	356765	768407	—		
6782	KIAA1007	NM_016284.2	4353	gcgcctgcgaagcaactctct	356791	768409	see also 6780 line		
6783	KIAA1007	NM_016284.2	4829	gcgcctgcgaagcaactctct	356806	768425	see also 6780 line		
6784	KIAA1007	NM_016284.2	5028	gcgcctgcgaagcaactctct	356811	768431	see also 6780 line		
6785	KIAA1007	NM_016284.2	5410	gcgcctgcgaagcaactctct	356824	768453	see also 6780 line		
6786	KIAA1007	NM_016284.2	5604	gcgcctgcgaagcaactctct	356864	768490	see also 6780 line		

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6786	HP1-EP74	NM_016287.1	110	atggaactccatccattgataag	28641	460375	-	-	-
6787	HP1-EP74	NM_016287.1	825	tgatgaactccatccattgataag	28657	460385	see also 6786 line	-	-
6788	HP1-EP74	NM_016287.1	1153	tacatccagccacacaaatcaaa	28664	460393	see also 6786 line	-	-
6789	MO25	NM_016289.2	660	gaagatccatccatgagatgag	359000	748138	-	-	-
6790	HSP70-4	NM_016290.4	403	gaagatccatccatgagatgag	359033	503743	-	-	-
6791	HSP70-4	NM_016290.1	1034	tcaagcagatgatcaccaagg	85107	503762	see also 6790 line	-	-
6792	ARPP-21	NM_016300.3	1126	attctgaagcgaagtaactctag	276934	485488	-	molecular function	-
6793	ARPP-21	NM_016300.3	1136	tgatgaactccatccattgataag	276935	485488	see also 6792 line	unknown	-
6794	ARPP-21	NM_016300.3	1191	tgaatgaagcgcgaattataat	276937	485491	see also 6792 line	-	-
6795	ARPP-21	NM_016300.3	1198	gcaagcgaagtaactcaattga	276938	485493	see also 6792 line	-	-
6796	ARPP-21	NM_016300.3	1200	ctcgaagcgaagtaactcaattga	276939	485494	see also 6792 line	-	-
6797	ARPP-21	NM_016300.3	1335	atccatgaagcctcttaagaana	276942	485497	see also 6792 line	-	-
6798	LO51185	NM_016302.2	529	gaagacacatccatgagtaatcc	191190	584509	-	-	-
6799	LO51185	NM_016302.2	877	tgtctctctatgattgatgat	191201	584525	see also 6798 line	-	-
6800	LO51186	NM_016303.1	552	acacatccatccatcttaattga	356931	702947	-	-	-
6801	DNAJB11	NM_016306.3	817	atgagtaaccctcttttgaaga	299397	534633	-	-	-
6802	DNAJB11	NM_016306.3	876	agcttccgacaaagaattgaca	299398	534635	see also 6801 line	chaperone	-
6803	DNAJB11	NM_016306.3	1102	agacatctcttgaattcaacttt	299405	534641	see also 6801 line	-	-
6804	CEB-6	NM_016315.1	1198	aaccttttaaccatcttaactgt	226447	729594	apoptosis	-	-
6805	REVIL	NM_016316.1	359	tatgaattatccatctatgattg	17658	598218	-	-	-
6806	REVIL	NM_016316.1	382	tgaattgtctcatctatgattgag	17559	598220	see also 6805 line	-	-
6807	REVIL	NM_016316.1	1648	catgagatataccagatctatcca	17590	598253	see also 6805 line	-	-
6808	REVIL	NM_016316.1	1766	tgcctatgaagcagaagatgattt	17594	598259	see also 6805 line	-	-
6809	REVIL	NM_016316.1	2819	tgtttctatacaagaacaaataa	17624	598287	see also 6805 line	-	-
6810	RAB14	NM_016322.2	294	ggctgagatgcttgaatctctatg	109910	519898	-	protein transporter	-
6811	SFMBT1	NM_016329.1	790	gaagacatctttagatctctatg	356961	708227	-	-	-
6812	SFMBT1	NM_016329.1	2076	tgctctactgttagatgataaga	357009	708289	see also 6811 line	-	-
6813	SFMBT1	NM_016329.1	2868	aacttgcctcatccatgagagagg	357033	708311	see also 6811 line	-	-
6814	ANC 2H01	NM_016331.1	1807	tctgaatgacttctctcatcaaat	357077	753152	transcription_regulat	-	-
6815	SRRM2	NM_016333.2	4549	ggctctctccagcactatcaaat	357164	786810	or	-	-
6816	IP011	NM_016338.3	1086	aattgttgaggagctgttaccattt	269165	651164	-	-	-
6817	IP011	NM_016338.3	1161	atctctatgaagccatcaaaaatt	269171	651171	see also 6816 line	-	-
6818	IP011	NM_016338.3	1162	tctctatgaagccatcaaaaatt	269172	651172	see also 6816 line	-	-
6819	IP011	NM_016338.3	1206	ctcttgaagccatcaaaaattga	269173	651173	see also 6816 line	-	-
6820	IP011	NM_016338.3	1226	aaagatgactctctcatcaatcc	269174	651174	see also 6816 line	-	-
6821	IP011	NM_016338.3	1270	aaagatgactctctcatcaatcc	269177	651179	see also 6816 line	-	-
6822	IP011	NM_016338.3	1727	atctgtaactctctcatcaatcca	269189	651200	see also 6816 line	-	-
6823	PDZGEF2	NM_016340.1	372	aaagacacatccatgagatgaca	294302	684518	signal transduction	-	-
6824	PDZGEF2	NM_016340.1	468	tgcctctgctgaattgttgaagg	296305	684524	see also 6823 line	-	-
6825	PLCE1	NM_016341.2	2645	agccpatggcaatttataattgg	196498	590693	kinase, related, signal transduction	-	-

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6826	PLCE1	NM_016341.2	3891	tgagcgttcgaatcattcatt	198525	500714	see also 8625 line
6827	PLCE1	NM_016341.2	4665	cggccgcttcacatcatatgc	198553	500738	see also 8625 line
6828	PLCE1	NM_016341.2	5327	agctccattttggcacatcc	198565	500749	see also 8625 line
6829	NIN	NM_016350.3	522	acctcttggaaggaatttt	148991	550633	-
6830	NIN	NM_016350.3	545	gacacattgaagagcaattat	148993	550633	see also 8629 line
6831	NIN	NM_016350.3	631	aagctgacccaataatattaga	148996	550538	see also 8629 line
6832	CPA4	NM_016352.1	671	gtgccaactctctgagatgat	185632	579955	-
6833	ZDHHC2	NM_016353.2	631	ctctcgtctgtgaaatgattt	328097	693641	carboxypeptidase
6834	ZDHHC2	NM_016353.2	632	tccctctgtgaaatgatttt	328098	693642	-
6835	ZDHHC2	NM_016353.2	814	tactaaagccaaatccatatta	328104	693651	see also 8633 line
6836	ZDHHC2	NM_016353.2	819	aagccaagcttcattatgttt	328105	693652	see also 8633 line
6837	ZDHHC2	NM_016353.2	824	aaagtcocatattatttttttt	328108	693653	see also 8633 line
6838	DDX47	NM_016355.2	775	agagtaacctactgtttttatt	59338	483287	-
6839	DDX47	NM_016355.2	934	tgagttccctatttaatttaag	59345	483293	see also 8638 line
6840	DCDC2	NM_016356.1	797	ggagctctctactacaat-tgg	315693	680672	-
6841	EPLIN	NM_016370.1	1313	ggccaacacagatgttttcca	322513	686647	-
6842	RAB9B	NM_016370.1	406	gggtatagtttaactaaagaa	110413	518433	signal transduction
6843	RAB9B	NM_016370.1	651	gggtatagtttaactaaagaa	110418	518440	see also 8642 line
6844	RBP1L1	NM_016374.4	2271	tctttttatggctcatatctgc	18925	810107	-
6845	RBP1L1	NM_016374.4	2280	tctttttatggctcatatctgc	18926	810108	see also 8644 line
6846	CD244	NM_016392.1	655	ctggcagatcctgtaagctttt	123819	634374	receptor activity
6847	THIL	NM_016397.2	1435	ctggcagatcctgtaagctttt	357357	710660	-
6848	RNF141	NM_016422.3	388	cgaggtctgtctaccagatgaa	357421	466360	-
6849	RNF141	NM_016422.3	389	cgaggtctgtctaccagatgaa	357422	466361	see also 8648 line
6850	LUC7A	NM_016424.2	239	ggaccacagagagcgtttgtaa	301880	723825	-
6851	LUC7A	NM_016424.2	242	accagacagagcgtttgtaaat	301881	723827	see also 8650 line
6852	LUC7A	NM_016424.2	244	cacagagatcctgttaaatatt	301882	723828	see also 8650 line
6853	LUC7A	NM_016424.2	245	actgagagctttgtaaatatt	301883	723829	see also 8650 line
6854	LUC7A	NM_016424.2	282	tctctggcaattgttcaaatata	301884	723832	see also 8650 line
6855	LUC7A	NM_016424.2	805	atggctatgccaaataaagtc	301902	723851	see also 8650 line
6856	DSGR5	NM_016430.2	113	cgctgcacatccgaagaagc	210208	708650	-
6857	DSGR5	NM_016430.2	122	tgccagaagaacagatgtatgc	210209	708651	see also 8656 line
6858	GLTP	NM_016433.2	906	ctctcatcaagcaccaataagc	305706	709349	-
6859	ARTS-1	NM_016442.2	906	atgctctgcgaagaagaataat	150605	556603	zinc binding
6860	PLEK2	NM_016445.1	230	ggccctctcctgagatgataaaa	309759	681146	-
6861	RAMP	NM_016448.1	947	ctatctctctctattttctcaat	357528	740492	-
6862	COPB	NM_016451.3	998	aagatctctctatctatccatc	268843	650897	-
6863	COPB	NM_016451.3	1105	aagatctctctatctatccatc	268876	650926	see also 8662 line
6864	COPB	NM_016451.3	2825	caagatgccaattctctatgaga	268895	650947	see also 8662 line
6865	LOC51234	NM_016451.3	355	ctcatctctctctctatgagag	357567	725721	-
6866	TMEM9	NM_016456.2	190	ctcatctctctctctatgagag	284962	673519	-
6867	TMEM9	NM_016456.2	193	ctcatctctctctctatgagag	284969	673520	see also 8666 line
6868	C20orf111	NM_016470.8	325	acgctgtctctcaagaagcttcca	357625	717937	-
6869	C20orf111	NM_016470.8	602	aaagcttccatctcagagatgaga	357629	717940	see also 8668 line

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6870	LOC51244	NM_0164743	625	tgagatcgtatgcataaatactcca	357647	778103	-	-	-
6871	LOC51244	NM_0164743	828	tgagatcgtatgcataaatactcca	357650	778105	see also 6870 line	-	-
6872	OP14cT100	NM_0164752	302	tgcctcttcctgcagatgaagct	357655	714881	-	-	-
6873	PIAP2	NM_0164802	201	tgcctcttcctgcagatgaagct	357728	724351	-	-	-
6874	PIAP2	NM_0164802	276	tgcctcttcctgcagatgaagct	357730	724354	see also 6873 line	-	-
6875	LOC51248	NM_0164843	340	tgctcagcttgagatgaatactc	316891	679777	-	-	-
6876	LOC51248	NM_0164843	341	tgctcagcttgagatgaatactc	316892	679778	see also 6875 line	-	-
6877	LOC51248	NM_0164843	465	tgctcagcttgagatgaatactc	316893	679781	see also 6875 line	-	-
6878	LOC51248	NM_0164843	547	tgcctcttcctgcagatgaagct	316894	679782	see also 6875 line	-	-
6879	OborR5	NM_0164853	335	ctgcagcatttcacaaatactgc	357787	716258	-	-	-
6880	OborR5	NM_0164853	336	tgagcatttcacaaatactgc	357788	716259	see also 6879 line	-	-
6881	KBTBD4	NM_0165063	935	aagatgctcttcctgcagatgaagct	132135	720643	-	-	-
6882	KBTBD4	NM_0165063	1322	tgcctcttcctgcagatgaagct	132145	720658	see also 6883 line	-	-
6883	CRK7	NM_0165071	1954	tgcatgatgatgcataaatactcca	77529	488349	kinase, related	protein serine/threonine	-
6884	CRK7	NM_0165071	2666	tgcatgatgatgcataaatactcca	77549	488362	see also 6883 line	kinase	-
6885	CRK7	NM_0165071	2667	tgcctcttcctgcagatgaagct	77550	488363	see also 6883 line	-	-
6886	CRK7	NM_0165071	2669	tgcctcttcctgcagatgaagct	77551	488364	see also 6883 line	-	-
6887	CRK7	NM_0165071	2700	tgcctcttcctgcagatgaagct	77554	488365	see also 6883 line	-	-
6888	VP55A	NM_0165161	175	atgtgcctcttcctgcagatgaagct	357908	752784	-	-	-
6889	VP55A	NM_0165161	496	tgcctcttcctgcagatgaagct	357918	752790	see also 6888 line	-	-
6890	VP55A	NM_0165161	499	atgcctcttcctgcagatgaagct	357919	752797	see also 6888 line	-	-
6891	VP55A	NM_0165161	687	gcagatgcctcttcctgcagatgaagct	357924	752803	see also 6888 line	-	-
6892	VP55A	NM_0165161	780	atgcctcttcctgcagatgaagct	357926	752807	see also 6888 line	-	-
6893	VP55A	NM_0165161	1849	tgcatgatgatgcataaatactcca	357946	752841	see also 6888 line	-	-
6894	VP55A	NM_0165161	2352	aaatcctccttcctgcagatgaagct	357964	752854	see also 6888 line	-	-
6895	VP55A	NM_0165161	2363	tctcagatgatgcataaatactcca	357965	752855	see also 6888 line	-	-
6896	VP55A	NM_0165161	2594	atgcctcttcctgcagatgaagct	357978	752864	see also 6888 line	-	-
6897	VP55A	NM_0165161	2598	aagctcttcctgcagatgaagct	357980	752865	see also 6888 line	-	-
6898	PIPOX	NM_0165161	2599	aagctcttcctgcagatgaagct	357981	752866	see also 6888 line	-	-
6899	PIPOX	NM_0165161	1043	caacccaagctcttcctgcagatgaagct	358033	713281	-	sarcosine oxidase	-
6900	UBAP1	NM_0165253	925	accacacagctcttcctgcagatgaagct	358034	713282	see also 6900 line	-	-
6901	UBAP1	NM_0165253	925	accacacagctcttcctgcagatgaagct	358034	713282	see also 6900 line	-	-
6902	UBAP1	NM_0165253	1497	agacacacagctcttcctgcagatgaagct	358043	713298	see also 6900 line	-	-
6903	UBAP1	NM_0165253	1499	agacacacagctcttcctgcagatgaagct	358044	713299	see also 6900 line	-	-
6904	ATP8A2	NM_0165293	830	gcctcttcctgcagatgaagct	73723	495298	-	plasma membrane cation-transporting ATPase	-
6905	ATP8A2	NM_0165293	2017	agcctcctgcagatgaagct	73746	495341	see also 6904 line	-	-
6906	ATP8A2	NM_0165293	2018	gcctcctgcagatgaagct	73749	495342	see also 6904 line	-	-
6907	KLF3	NM_0165312	705	accctgaattgaacatcatgaga	5961	461016	transcription_regulat or	translation regulator	-
6908	HMST4	NM_0165422	279	caggaagacatttcacaaatactcca	92044	488597	kinase, related	-	-

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6909	MS74	NM_016549.2	939	ttgaaagctttcaactgctttt	92058	488612	see also 6908 line		
6910	LOC51277	NM_016549.1	514	acgaagagcttcaactgctttt	109506	519088	signal transduction	-	-
6911	LOC51277	NM_016549.1	518	aaagctctctcaactgctttt	109507	519089	see also 6910 line	-	-
6912	C19F42	NM_016549.1	1255	aaagctctctcaactgctttt	181657	805468	-	-	-
6913	GOLPH2	NM_016549.2	215	acagagctctcaactgctttt	323550	726900	-	-	-
6914	B1AF	NM_016561.1	779	gagaaagagagctttt	289781	720568	apoptosis	-	-
6915	TLR7	NM_016582.2	1783	tcacaaacagctttcaactt	246847	528144	receptor activity	-	-
6916	TLR7	NM_016582.2	2180	tcacaaacagctttcaactt	246856	528159	see also 6915 line	-	-
6917	PTX1	NM_016570.1	282	aaagtagacagagctttctgc	358160	722046	-	-	-
6918	PTX1	NM_016570.1	1069	tcacaaacagagctttctgc	358182	722079	see also 6917 line	-	-
6919	GLUL1	NM_016571.1	856	tgagcttagctcaactgctttt	232722	617232	-	-	-
6920	GMPR2	NM_016576.2	478	atcttgcttgcacttttgctac	232313	610308	-	-	-
6921	RA8B8	NM_016577.1	729	cttgttaagagcagatgaacatc	110379	784546	signal transduction	-	-
6922	RA8B8	NM_016577.1	774	aaagacttagctctgctttt	110380	784547	protein transporter	-	-
6923	PCDH12	NM_016580.2	1770	ggccttgatgcagcaactgc	149476	551021	calcium ion binding	-	-
6924	PCDH12	NM_016580.2	4142	aaacaaacacagcagcaactgc	149511	551066	see also 6923 line	-	-
6925	MBIP	NM_016586.1	205	gttgttaaaattcaactgcttt	149512	551067	see also 6923 line	-	-
6926	MBIP	NM_016586.1	535	ggacagcaacttcaactgcttt	294176	756484	-	-	-
6927	MBIP	NM_016586.1	696	tcctgaagcttgaactgcttt	294184	756494	see also 6926 line	-	-
6928	MBIP	NM_016586.1	661	tcctgaagcttgaactgcttt	294189	756502	see also 6926 line	-	-
6929	NRN1	NM_016588.2	661	aaagtagacagagctttctgc	355234	769377	-	-	-
6930	NRN1	NM_016588.2	664	ttacagcagcagctttctgc	355235	769377	see also 6929 line	-	-
6931	NRN1	NM_016588.2	845	cttccaaacttgaagctttctgc	355236	769382	see also 6929 line	-	-
6932	NRN1	NM_016588.2	898	cttccaaacttgaagctttctgc	355237	769383	see also 6929 line	-	-
6933	NRN1	NM_016588.2	899	ggcagagagcttgaagctttctgc	355239	769384	see also 6929 line	-	-
6934	NRN1	NM_016588.2	958	atccagagcttgaagctttctgc	355240	769386	see also 6929 line	-	-
6935	PART1	NM_016590.2	89	aactcaattgactgactcctgc	282921	590028	molecular function	-	-
6936	CYP39A1	NM_016593.3	1223	ctctctgcttcaactgactgcttc	221051	608144	human cytochromes P450	-	-
6937	ZDHHC3	NM_016598.1	439	tgactgactgactgactgcttc	323573	671033	-	-	-
6938	ZDHHC3	NM_016598.1	1171	ggcagagccttcaactgactgcttc	323580	671044	see also 6937 line	-	-
6939	MYO22	NM_016599.2	306	aaagcttctcaaaagactgcttc	125629	686979	phosphatase	-	-
6940	C5orf5	NM_016603.1	465	ctctctctctcttgaactgcttc	297702	665242	-	-	-
6941	C5orf5	NM_016603.1	578	tcgccacgcttgaactgcttc	297707	665248	see also 6940 line	-	-
6942	C5orf5	NM_016603.1	579	ccgccacgcttgaactgcttc	297708	665248	see also 6940 line	-	-
6943	C5orf5	NM_016603.1	590	ggcagagcttgaactgactgcttc	297717	665260	see also 6940 line	-	-
6944	C5orf5	NM_016603.1	925	ggcagagcttgaactgactgcttc	297717	665260	see also 6940 line	-	-
6945	C5orf5	NM_016603.1	1744	ctgactgactgactgactgcttc	297743	665285	see also 6940 line	-	-
6946	C5orf5	NM_016603.1	2758	aaagtagacagagcttgaactgcttc	297711	665307	see also 6940 line	-	-
6947	C5orf7	NM_016604.2	4636	aaagtagacagagcttgaactgcttc	358339	739507	-	-	-
6948	C5orf7	NM_016604.2	4637	ggcagagcttgaactgactgcttc	358340	739508	see also 6947 line	-	-
6949	LOC51308	NM_016606.1	2310	ccggagagagagcttgaactgcttc	358361	754464	-	-	-

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6950	SLC22A17	NM_016600.2	445	tccctcaactacccgaacactcagg	274354	514692	-	-	-	receptor activity, transcription, regulat or,	-
6951	TRAP	NM_016614.2	963	tcccttttgcgagatattttc	113378	639449	-	-	-	neurotransmitters odium symporter	-
6952	SLC6A13	NM_016615.2	1603	cgcctgcctcacacaaagatgac	259969	639987	-	-	-	transcription, regulat	-
6953	BH080	NM_016621.2	1498	gtctctagggttggtacacatcgt	22727	456359	or	-	-	-	-
6954	BH080	NM_016621.2	2248	gaactgcacaggaactctgaacc	22734	456368	see also 6953 line	-	-	-	-
6955	BM-009	NM_016623.2	573	tccactagtgcgaattaaaga	358534	754265	-	-	-	-	-
6956	BM-009	NM_016623.2	575	cactactatgacaattaaagaaa	358535	754266	see also 6955 line	-	-	-	-
6957	BM-009	NM_016623.2	1084	aggttaatttggttggtctaat	358547	754282	see also 6955 line	-	-	-	-
6958	BM-009	NM_016623.2	1085	aggttaatttggttggtctaat	358548	754283	see also 6955 line	-	-	-	-
6959	BM-009	NM_016623.2	1091	tgttggttgctcaataactctat	358549	754284	see also 6955 line	-	-	-	-
6960	BM-009	NM_016623.2	1093	tgttggttgctcaataactctat	358550	754285	see also 6955 line	-	-	-	-
6961	MGC12197	NM_016623.2	981	tccctcaatgacacagatgaca	358564	573379	-	-	-	-	-
6962	LOC51321	NM_016627.1	869	accctatgtaattggacacatt	157365	559551	-	-	-	-	-
6963	C21orf66	NM_016631.2	2721	tgcgaatgacacaaatgtgaa	23481	452987	or	-	-	transcription, regulat	-
6964	MROS30	NM_016640.2	1067	atttctctgcaccttttgctc	227161	639924	apoptosis	-	-	DNA binding	-
6965	MIR16	NM_016641.3	495	tgacagctacacactgctgtag	198925	708750	-	-	-	-	-
6966	MIR16	NM_016641.3	496	tgacagctacacactgctgtag	198926	708751	see also 6965 line	-	-	-	-
6967	ZAK	NM_016653.1	699	agtttggaaggttaccagtag	107766	495484	kinase, related, cell cycle,	-	-	-	-
6968	ZAK	NM_016653.1	1548	gcgaagccacacttttgaatgg	107815	495509	signal transduction	-	-	-	-
6969	AD03	NM_016624.1	146	aggaacatgtctctgctctcag	121181	526499	see also 6967 line	-	-	-	-
6970	PER3	NM_016631.1	601	aagtttagtgcacattcttgcac	254801	639406	transcription, regulat	-	-	-	-
6971	PER3	NM_016631.1	1130	atgttgcctacacacaaagtt	254816	639425	see also 6970 line	-	-	-	-
6972	POLA	NM_016937.1	926	ctctcttttgcacattgcatca	35644	463946	-	-	-	Nuclear factor 1	-
6973	POLA	NM_016937.1	928	ctctcttttgcacattgcatca	35645	463947	see also 6972 line	-	-	C-type-7	-
6974	POLA	NM_016937.1	1498	agacaccttttgctctgaatgac	35661	463965	see also 6972 line	-	-	-	-
6975	POLA	NM_016937.1	2960	gaattttttgctctgaatgac	35690	463907	see also 6972 line	-	-	-	-
6976	POLA	NM_016937.1	4037	tactatgatactctgctgtag	35720	463952	see also 6972 line	-	-	-	-
6977	C21orf6	NM_016940.1	248	gaagatgactctatgtaagtc	192177	595001	phosphatase	-	-	molecular function unknown	-
6978	PAR08A	NM_016948.1	124	tctgtagaggaagagcaattt	303355	675122	cell cycle	-	-	-	-
6979	SPOCK3	NM_016950.1	904	tcaacactatgctctctctagg	153179	663946	-	-	-	-	-
6980	TBX22	NM_016954.2	467	tggatctccacactgaatgac	12772	449177	-	-	-	transcription factor	-
6981	SLAVP	NM_016955.1	603	tgccttgacacaaaatttttgg	49238	774550	-	-	-	-	-
6982	SLAVP	NM_016955.1	626	ttcctgtaggttgctctatatt	49239	774551	see also 6981 line	-	-	-	-

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6993	HOXC13	NM_017410.2	145	ctggcggagacgttatgag	5177	444792	transcription_regulator or receptor activity,	RNA polymerase II transcription factor	—
6994	FZD3	NM_017412.2	1257	atgatagatgcgtgcgaatc	242503	630562	gpr, signal transduction	frizzled receptor	schizophrenia(精神分裂病)
6995	FZD3	NM_017412.2	1653	ctgttcattatctccbaacaga	242515	630563	see also 6994 line	—	—
6996	FZD3	NM_017412.2	1988	tgtcttaaatggcgaatttttt	242558	630599	see also 6994 line	—	—
6997	IL1RAPL2	NM_017416.1	1317	gttgaagaactatatacaga	122290	527771	receptor activity	—	—
6998	IL1RAPL2	NM_017416.1	1622	aaagactgcgagctccatcaga	122297	527777	see also 6997 line	—	—
6999	IL1RAPL2	NM_017416.1	2170	atortgaactacacactat	122311	527797	see also 6997 line	—	—
6999	IL1RAPL2	NM_017416.1	2173	gtgactctccagactatctct	122312	527798	see also 6997 line	—	—
6999	IL1RAPL2	NM_017416.1	2194	ctgacacggagatgaggaatttt	122313	527799	see also 6997 line	—	—
6999	IL1RAPL2	NM_017416.1	2200	cggagctgagctatcttgcgaact	122316	527800	see also 6997 line	—	—
6993	SIX4	NM_017420.1	604	ggccgaagaagacgttatgtttt	11292	448442	transcription_regulator	transcription factor	—
6994	SIX4	NM_017420.1	608	gaagacgcgttatatttcag	11294	448443	see also 6993 line	—	—
6995	SIX4	NM_017420.1	1421	tccttaattggagctatttggttc	11317	448457	see also 6993 line	—	—
6996	SIX4	NM_017420.1	1899	atctcgaagcaacacatcagag	11332	448471	see also 6993 line	—	—
6997	COO3	NM_017423.2	800	tcctatgccttgaggaattttt	214016	604452	—	hexaprenyldihydrox ybenzoate methyltransferase	—
6998	GALN17	NM_017423.1	268	aaatgcactgaagctatcaga	211158	599563	—	—	—
6999	GALN17	NM_017423.1	270	gtgactcgtgactcattgag	211157	599566	see also 6998 line	—	—
7000	GALN17	NM_017423.1	271	tggacttgactcattcagaaga	211158	599567	see also 6998 line	—	—
7001	SPA17	NM_017425.2	154	aaacaccactacgaattccaca	298645	666176	kinase, related, signal transduction	cAMP-dependent protein kinase, regulator	—
7002	SPA17	NM_017425.2	223	gaaccaacctgcattatccacc	298649	666180	see also 7001 line	—	—
7003	BCD01	NM_017428.1	512	tcggaaacctctcaaacatcat	224474	711804	—	—	—
7004	MYO3A	NM_017433.3	1518	tgggaagctgaatcaagaacc	92982	446193	kinase, related	—	—
7005	MYO3A	NM_017433.3	2130	tggctcactcgggggaacaact	92999	446214	see also 7004 line	—	—
7006	MYO3A	NM_017433.3	2358	aaactctcaactaattgcgaat	93009	446220	see also 7004 line	—	—
7007	MYO3A	NM_017433.3	2451	tgaatctcagatttttcaat	93013	446224	see also 7004 line	—	—
7008	MYO3A	NM_017433.3	3525	atcagaattgcgactcaagaaga	93042	446257	see also 7004 line	—	—
7009	MYO3A	NM_017433.3	3527	caagattgcgctccagaagaaa	93043	446258	see also 7004 line	—	—
7010	MYO3A	NM_017433.3	3528	aggaattgcgctccagaagaaa	93044	446259	see also 7004 line	—	—
7011	GPSE2	NM_017437.1	682	ctgcagcgtctctatctgag	43980	473298	—	—	—
7012	MDM1	NM_017440.2	638	agctctgagaaacttgaat	324570	701569	—	—	—
7013	MPP-38	NM_017445.2	242	taactcttcctgagaaataa	282425	658563	—	—	—
7014	MPP-38	NM_017446.2	971	atctcgaagaatgaaactgaag	292270	658591	see also 7013 line	—	—
7015	MARK2	NM_017490.1	1944	ccccccacaggaagaaacttga	90260	507963	kinase, related	—	—
7016	HSPG25L2 G	NM_017510.3	194	acaggagcagcgtgatcgaag	127301	529333	—	—	—
7017	DNAH3	NM_017539.1	9592	cccttggtctccaaagatcaact	79061	814679	—	—	—

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7018	DNAH3	NM_017538.1	10839	gaactctcaatcagaatcttc	78080	814711	see also 7017 line	
7019	DNAH3	NM_017538.1	11628	agcgcggcagctcatgattca	78095	814722	see also 7017 line	
7020	GALNT10	NM_017540.3	896	aggcaacacagctggagaatcc	358991	599150		-
7021	GALNT10	NM_017540.3	897	aggcaacacagctggagaatcc	358992	599151	see also 7020 line	-
7022	POK8	NM_017542.3	1348	agattcaacagctgactctcttt	35941	463814	apoptosis	-
7023	POK8	NM_017542.3	1352	gaactcagcagctatatttgagg	35942	463815	see also 7022 line	-
7024	HAOI	NM_017545.2	784	ggactcagcagctatatttgagg	221002	608051	glycolate oxidase	-
7025	C40	NM_017546.3	1171	cccttgatcgctctagaaatgt	277894	732130		-
7026	C40	NM_017546.3	1275	agttttaaatcgctacatactca	277896	732134	see also 7025 line	-
7027	C40	NM_017546.3	1424	ttgctcagctacacaaattttaa	277905	732143	see also 7025 line	-
7028	H17	NM_017547.2	1324	cgctagttgtcaaatgactcttt	226932	613537		-
7029	H17	NM_017547.2	1453	tcctcttaccgctctcttaactg	226934	613541	see also 7028 line	-
7030	UCCL1	NM_017548.1	900	ctctcgaggaaacatttaacoda	154236	745852	calcium ion binding	-
7031	UCCL1	NM_017548.1	954	ttgcatctcaagctggatataaa	154239	745856	see also 7030 line	-
7032	L0850	NM_017558.1	2884	tagctcgtatccaccatctaac	355068	781040		-
7033	IL17RD	NM_017563.1	639	agccttgaactcgtcttttaacgc	244459	633756	receptor activity	-
7034	IL17RD	NM_017563.1	1327	ccacgtatccagcttctcatctgt	244476	633768	see also 7033 line	-
7035	NACK	NM_017567.1	627	ctctatagagactttgataatg	93824	510032	kinase related	-
7036	P38IP	NM_017569.2	971	atgaacactccgccaaagaag	359145	709899		-
7037	UBE2Q	NM_017582.5	772	agccatctcagatasaataaasa	231288	620268		-
7038	UBE2Q	NM_017582.5	800	ccgcagccagatgctctaaatgg	231287	620268	see also 7037 line	-
7040	UBE2Q	NM_017582.5	881	taactatcacagctgctctaaatg	231289	620300	see also 7037 line	-
7041	UBE2Q	NM_017582.5	892	gaatttcacagcgggaactatg	231270	620301	see also 7037 line	-
7042	UBE2Q	NM_017582.5	913	ttgcgtcgaactcgttaagtcca	231271	620302	see also 7037 line	-
7043	UBE2Q	NM_017582.5	915	cagtcgaactcgttaagtcca	231272	620303	see also 7037 line	-
7044	TRIM44	NM_017583.3	1254	gaacacacagctcctacagttcc	231279	620309	see also 7037 line	-
7045	BMP2K	NM_017593.3	398	aactttgactccttaigtatcca	160593	710183		-
	DKFZp761			ttgaacagcaatgtatgctataa	74022	496038	kinase related	-
7046	A052	NM_017602.2	1050	atcggaatccactctatctca	359399	751928		-
7047	A052	NM_017602.2	1069	ttcagtggtggaactcaacagg	359400	751928	see also 7046 line	-
7048	A052	NM_017602.2	1713	aggaatacctcagctatgcaag	359404	751936	see also 7046 line	-
7049	E2220	NM_017612.2	322	accccgcaatacaagaactaaa	359529	480066		-
7050	E2220	NM_017612.2	324	gccgagaactcaagacttaaacg	359530	480068	see also 7049 line	-
7051	E2220	NM_017612.2	634	ttgtaggaagctcctgctatctt	359545	480088	see also 7049 line	-
7052	E2220	NM_017612.2	656	tactatcttttgccttgataaat	359546	480089	see also 7049 line	-

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0753	DKFZ434	52220	NM_017612.2	800	accgagacagctccacttttaa	359550	490094	see also 7049 line
0754	DOINSON	525	NM_017613.2	525	ctccctgacgctgactatataa	279475	712073	-
0755	DOINSON	526	NM_017613.2	526	accgagacagctgactatataa	279476	712074	see also 7054 line
0756	DOINSON	528	NM_017613.2	528	ctccgagacagctgactatataa	279477	712075	see also 7054 line
0757	DOINSON	629	NM_017613.2	629	ccagctgctggagcagcaagatt	279480	712076	see also 7054 line
0758	EIF2C4	273	NM_017625.2	273	ctccagctgttaccactatttt	359738	768650	-
0759	EIF2C4	843	NM_017625.2	843	agctctatcatgttcatgttct	359750	768666	see also 7058 line
0760	EIF2C4	975	NM_017625.2	975	gtgacagatgaacagaaataac	359754	768667	see also 7058 line
0761	EIF2C4	2251	NM_017625.2	2251	agcaattcgaagcactatattta	359768	768689	see also 7058 line
0762	FLJ20045	576	NM_017633.1	576	ttccagctgacacctgatttt	359867	720984	-
0763	LRRC16	801	NM_017640.2	801	ttctgcgcagccacgaagatt	359899	611600	-
0764	LRRC16	804	NM_017640.2	804	atgcgcagccagcaagatttct	359900	611601	see also 7063 line
0765	LRRC16	828	NM_017640.2	828	ttccagctccctttgtaaat	359904	611604	see also 7063 line
0766	MBTD1	171	NM_017643.1	171	ggcgacactcctgctgatact	359936	749859	or transcription_regulat
0767	MBTD1	849	NM_017643.1	849	agctatagaccttaattatt	359962	749864	see also 7066 line
0768	MBTD1	1106	NM_017643.1	1106	cagcagcagtaaatattatt	359969	749895	see also 7066 line
0769	MBTD1	1323	NM_017643.1	1323	gttctcgttaactgataataac	359978	749907	see also 7066 line
0770	DREI	831	NM_017644.2	831	cactcaaacaccttccaaac	130842	531215	-
0771	DREI	948	NM_017644.2	948	gtgtgaacctttgtgttaac	130845	531220	see also 7070 line
0772	DREI	1416	NM_017644.2	1416	acctgagcttgatgtataac	130850	531231	see also 7070 line
0773	DREI	1479	NM_017644.2	1479	agcgcagctgctccacaattg	130854	531232	see also 7070 line
0774	DREI	1480	NM_017644.2	1480	agcgcagctgctccacaattg	130855	531233	see also 7070 line
0775	IP1	374	NM_017645.3	374	aggaaacctatatactgatt	85841	719784	-
0776	IP1	718	NM_017645.3	718	ttctgagctgctgttggaag	85845	719785	see also 7075 line
0777	FTSJ3	172	NM_017647.2	172	agctcaatgcctcttctgaag	360066	715728	-
0778	AHI1	2229	NM_017651.3	2229	gtgtcaatgcctcttctgaag	360187	722537	-
0779	AHI1	2231	NM_017651.3	2231	gtgtcaatgcctcttctgaag	360188	722538	see also 7078 line
0780	AHI1	2232	NM_017651.3	2232	gtgtcaatgcctcttctgaag	360189	722539	see also 7078 line
0781	AHI1	3474	NM_017651.3	3474	ttgcacctcaatatacttttg	360241	722587	see also 7078 line
0782	FLJ20071	2110	NM_017653.2	2110	ttgcacctcaatatacttttg	360308	730753	-
0783	FLJ20080	316	NM_017653.2	316	ttgtgtctctcttttgatcca	145361	805795	-
0784	FLJ20080	2738	NM_017657.2	2738	ttgtgtctctcttttgatcca	145361	805795	-
0785	BTBD5	123	NM_017656.1	123	ttgtgtctctcttttgatcca	145416	805854	see also 7083 line
0786	FLJ20084	954	NM_017659.1	954	ttccagtagtgatgtaaat	129404	531108	-
0787	TRPM6	2793	NM_017662.3	2793	ttccagtagtgatgtaaat	360457	721510	kinase related
0788	TRPM6	3101	NM_017662.3	3101	ttccagtagtgatgtaaat	103364	516833	receptor activity
0789	TRPM6	3498	NM_017662.3	3498	ttccagtagtgatgtaaat	103372	516841	channel
0790	C20orf42	2068	NM_017671.2	2068	acccttcttctgataataac	103386	516851	see also 7087 line
0791	TRPM7	1453	NM_017672.2	1453	acccttcttctgataataac	322657	697056	see also 7087 line
					tactcttgcagttgaagaag			channel
					actctgatttgcacctatccc	103489	516963	kinase related

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7092	TRPM7	NM_017672.2	1621	hznagtaagcagcaataattcc	102496	515672	see also 7091 line
7093	TRPM7	NM_017672.2	1907	caagctcagcaagcagcagcagc	103514	515866	see also 7091 line
7094	TRPM7	NM_017672.2	2175	agaagcctcagcagcaagcagc	103527	515896	see also 7091 line
7095	TRPM7	NM_017672.2	2179	atcagctcagcagcagcagc	103528	515897	see also 7091 line
7096	TRPM7	NM_017672.2	2177	gcctctcagcagcagcagc	103559	517026	see also 7091 line
7097	TRPM7	NM_017672.2	2870	atgagcagcagcagcagcagc	103563	517029	see also 7091 line
7098	TRPM7	NM_017672.2	2886	caagcagcagcagcagcagc	103584	517032	see also 7091 line
7099	TRPM7	NM_017672.2	2918	ccagagcagcagcagcagc	103586	517035	see also 7091 line
7100	TRPM7	NM_017672.2	3238	gcctctcagcagcagcagc	103594	517053	see also 7091 line
7101	TRPM7	NM_017672.2	3879	hznagcagcagcagcagc	103594	517071	see also 7091 line
7102	TRPM7	NM_017672.2	3882	gcagcagcagcagcagcagc	103596	517072	see also 7091 line
7103	TRPM7	NM_017672.2	5312	cccaaatccatccatctatctcc	103637	517123	see also 7091 line
7104	TRPM7	NM_017673.4	2210	ccagcagcagcagcagcagc	360542	719334	-
7105	Clorf26	NM_017673.4	2242	caagcagcagcagcagcagc	360543	719336	see also 7104 line
7106	Clorf26	NM_017673.4	2647	ccctcagcagcagcagcagc	360561	719349	see also 7104 line
7107	FLJ20125	NM_017673.1	559	atgctatcagcagcagcagc	27031	453654	-
7108	Clorf26	NM_017673.1	766	ccagcagcagcagcagcagc	360574	781444	-
7109	BCAS3	NM_017673.2	543	hznagcagcagcagcagcagc	310404	689320	-
7110	BCAS3	NM_017673.2	754	gcagcagcagcagcagcagc	310414	689326	see also 7109 line
7111	BCAS3	NM_017673.2	1813	ccagcagcagcagcagcagc	310432	689350	see also 7109 line
7112	BCAS3	NM_017673.2	1815	ccagcagcagcagcagcagc	310433	689351	see also 7109 line
7113	FLJ20156	NM_017691.1	594	ccagcagcagcagcagcagc	360650	757527	-
7114	BCAM	NM_017693.2	1486	gcagcagcagcagcagcagc	360636	753549	-
7115	BCAM	NM_017693.2	1525	gcagcagcagcagcagcagc	360641	753551	see also 7114 line
7116	FLJ20160	NM_017694.2	222	ccagcagcagcagcagcagc	360664	800630	-
7117	FLJ20160	NM_017694.2	1419	hznagcagcagcagcagcagc	360688	748523	see also 7116 line
7118	FLJ20160	NM_017694.2	1822	atcagcagcagcagcagcagc	361003	748536	see also 7116 line
7119	FLJ20160	NM_017694.2	1823	gcagcagcagcagcagcagc	361004	748537	see also 7116 line
7120	FLJ20160	NM_017694.2	1824	ccagcagcagcagcagcagc	361005	748538	see also 7116 line
7121	FLJ20160	NM_017694.2	1826	gcagcagcagcagcagcagc	361006	748539	see also 7116 line
7122	OBDFP	NM_017711.2	347	aacacagcagcagcagcagc	198959	590948	-
7123	C2orf13	NM_017714.1	359	aacctcagcagcagcagcagc	203322	593936	-
7124	FLJ20259	NM_017730.2	1700	ccagcagcagcagcagcagc	361191	785768	-
7125	FLJ20272	NM_017735.2	671	aacacagcagcagcagcagc	361324	767456	-
7126	FLJ20275	NM_017731.4	104	ccagcagcagcagcagcagc	361414	768126	-
7127	FLJ20275	NM_017731.4	693	ccagcagcagcagcagcagc	361425	768139	see also 7126 line
7128	FLJ20277	NM_017739.1	763	ccagcagcagcagcagcagc	210426	593378	-
7129	FLJ20277	NM_017739.1	719	hznagcagcagcagcagcagc	210430	593368	see also 7128 line
7130	FLJ20277	NM_017739.1	772	ccagcagcagcagcagcagc	210431	593367	see also 7128 line
7131	STIL	NM_017744.4	593	hznagcagcagcagcagcagc	361452	767505	-
7132	STIL	NM_017744.4	602	atcagcagcagcagcagcagc	361453	767506	see also 7131 line
7133	STIL	NM_017744.4	910	gcagcagcagcagcagcagc	361458	767518	see also 7131 line
7134	STIL	NM_017744.4	914	ccagcagcagcagcagcagc	361474	767538	see also 7131 line
7135	BCOR	NM_017745.4	898	ccagcagcagcagcagcagc	361493	739394	-

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7138	BCOR	NM.0177454	870	ctcgcacgcgaacaaagcttc	361494	730395	see also 7135 line
7137	BCOR	NM.0177454	875	ctcgcacaaagctctcttcctca	361497	730396	see also 7135 line
7136	BCOR	NM.0177454	1692	ggatctctcgaagaaacacatc	361508	734003	see also 7135 line
7138	FL20287	NM.0177481	855	tcgaatgcttgctgaagaaagctg	361589	772406	-
7140	FL202300	NM.0177531	354	tgcatctcacaagctctctctgt	361663	803942	-
7141	FL202300	NM.0177531	411	ctctcagcggcgagctaaat	361684	803943	see also 7140 line
7142	FL202300	NM.0177531	413	ctctcagcggcgagctaaatga	361685	803944	see also 7140 line
7143	FL202300	NM.0177531	415	ctcagcagcggcgagctaaatgaag	361686	803945	see also 7140 line
7144	FL202303	NM.0177554	633	gaacacacagctaaatgaat	361780	755688	-
7145	FL202303	NM.0177554	841	tcctctctatgctagaatttgaat	361795	755694	see also 7144 line
7146	FL202303	NM.0177554	843	tcctctctatgctagaatttga	361796	755695	see also 7144 line
7147	FL202311	NM.0177604	3156	gccttgcttgtagaagcttc	362013	747983	-
7148	FL202320	NM.0177651	565	cgagctctcagctgtctctta	362081	755895	-
7149	FL202331	NM.0177663	792	tgctttcttgctggaagaa	196894	589223	-
7150	FL202331	NM.0177663	1539	tgctttcttgctggaagaa	196923	589224	see also 7149 line
7151	PXK	NM.0177712	1487	ctcgaaagagctcaaacgcctc	98633	499193	kinase related
7152	OSBP10	NM.0177843	2079	ctctcgtggagctctcagtg	303410	767177	-
7153	OSBP10	NM.0177843	2080	tccttgaggagctctcagtg	303411	767178	see also 7152 line
7154	C1orf58	NM.0177911	639	cgcttcctcaataacacatctca	362426	756523	-
7155	C2orf21	NM.0177982	1819	caagagctccctcaaaagac	362604	784370	-
7156	UBE2R2	NM.0178112	789	gcacaacatcagattctctta	231308	816884	-
7157	SARS2	NM.0178272	829	ctctccacacgctctctctcc	100177	514435	-
7158	OCA1	NM.0178301	168	tgatctgagagctgctattcttc	362840	713507	-
7159	OCA1	NM.0178301	333	tgatctgagagctgctattcttc	362850	713513	see also 7158 line
7160	FL20487	NM.0178411	363	atgcctctcagagctattctctg	363009	715894	-
7161	C1orf77	NM.0178412	470	atgcagctgacactcactctgt	363039	756783	-
7162	FL20516	NM.0178581	303	agctctgagctgagactctga	363173	716066	-
7163	FL20516	NM.0178581	433	cgagctctgttcaaacgctg	363178	716074	see also 7162 line
7164	FL20530	NM.0178641	1041	atcttgatgagagactggaat	363266	800745	-
7165	FL20530	NM.0178641	1161	tcctgatcactcagctataat	363269	800753	-
7166	FL20530	NM.0178641	1406	ctcgagaaatgaatcacaaac	363279	800755	see also 7164 line
7167	FL20531	NM.0178652	339	ttgagcggctcctctctcagg	363287	807703	-
7168	FL20558	NM.0178801	1446	atcaacatcactcactcagttt	188402	582242	-
7169	FL20558	NM.0178801	1451	acatcactcactcactcagttt	188403	582244	see also 7168 line
7170	PINX1	NM.0178843	238	aaagcttgagctgtctcaagaa	64934	478914	nucleic acid binding
7171	C6orf86	NM.0179031	311	ccgaagatgaagctcagtaagc	363878	715076	-
7172	C1orf10	NM.0179172	819	tcctcatctcagctcttcttctt	136236	543098	-
7173	C1orf10	NM.0179172	1145	gtcacaacaacagctcttctt	136243	543108	-
7174	STX17	NM.0179181	604	aaactctgaagacgactcaatg	305781	724227	see also 7172 line
7175	STX17	NM.0179181	605	aaactctgaagacgactcaatg	305782	724228	-
7176	STX17	NM.0179181	688	caactctcagacgactcaatg	305783	724229	see also 7174 line
7177	PRPF39	NM.0179222	2446	cgaaactctcagacgactcaatg	302048	769341	-
7178	C1orf119	NM.0179242	368	cgaaactctcagacgactcaatg	364082	711572	-
7179	FL20716	NM.0179382	393	tgctctctcagctgcttctcagc	364357	781541	-

7180	USP47	NM.017944.2	995	atcaactctctcaagaagatct	190068	794391	-	-	-
7181	CADP52	NM.017954.7	1012	gtcgagatttaattattcaasaa	364780	768324	-	-	-
7182	CADP52	NM.017954.7	1744	atgatcaatcagaatcagatcta	364812	768345	-	-	see also 7181 line
7183	CADP52	NM.017954.7	2452	agctctctctcaactcaactct	364824	768358	-	-	see also 7181 line
7184	CADP52	NM.017954.7	2455	cgcctctctcaactcaactcaga	364825	768359	-	-	see also 7181 line
7185	OT4orf102	NM.017970.2	3042	atgacagatcaatcagaatgctc	321311	808617	-	-	-
7186	AP-G16L	NM.017974.2	1425	tacacgaagaatgctctcaataag	364950	532060	-	-	-
7187	AP-G16L	NM.017974.2	1495	atgcttaatgaatgagatcatttg	364955	532063	-	-	see also 7186 line
7188	FJ10036	NM.017987.2	585	caactcgtctcaactcaactcaata	364968	725630	-	-	-
7189	PDPY2	NM.017987.2	60	atggcaactcagatcttaaaagc	159956	559003	-	-	-
7190	RUPR2	NM.017990.3	3094	ctctcgaattgagagatcttttgc	214810	812501	-	-	-
7191	FJ10094	NM.017993.1	522	gactcgaatcccccacttaacc	60847	482372	-	-	-
7192	FJ10094	NM.017993.1	928	cagcgaagatgactcttatga	60861	482382	-	-	see also 7191 line
7193	FJ10094	NM.017993.1	1330	aagctcttacatcagaacaaagc	60865	482389	-	-	see also 7191 line
7194	FJ10094	NM.017993.1	1375	caacgaagaacacagaacatttg	60866	482391	-	-	see also 7191 line
7195	FEZL	NM.018000.2	783	cgctctgctcgcgaagaattctc	365279	746473	-	-	-
7196	ESRRB1	NM.018010.2	824	aactcgaatgctcgaatttgaact	365267	687750	-	-	receptor activity
7197	ESRRB1	NM.018010.2	978	caatcagcgcgaagaagaactaca	365271	687756	-	-	see also 7196 line
7198	FJ10154	NM.018011.1	479	gtccgcgaacgaagaactcttcag	365281	790880	-	-	-
7199	BCL11A	NM.018011.2	245	tgatcaacccccaacacttaaac	365303	525593	-	-	see also 7199 line
7200	BCL11A	NM.018011.2	444	tggacacctctctgagaagaac	365301	525593	-	-	see also 7199 line
7201	BCL11A	NM.018011.2	548	caagaagatagacatttttttaca	365308	525500	-	-	see also 7199 line
7202	BCL11A	NM.018011.2	702	cctcgagatgatttgaaagatg	365311	525502	-	-	see also 7199 line
7203	BCL11A	NM.018011.2	736	tacatctgacactctgaacaaaca	365316	525503	-	-	see also 7199 line
7205	BCL11A	NM.018011.2	936	ctctcagtgattctaatgctcaga	365317	525507	-	-	see also 7199 line
7206	BCL11A	NM.018011.2	1154	agctcttaactcgtctgaatctac	365319	525512	-	-	see also 7199 line
7207	BCL11A	NM.018011.2	1157	ctcccttaactcgtctgaatctct	365320	525513	-	-	see also 7199 line
7208	BCL11A	NM.018011.2	1343	ctccgcgcagatgattctcttcg	365322	525513	-	-	see also 7199 line
7209	BCL11A	NM.018011.2	2384	tcccgcgcagatgattctcttcg	365322	525513	-	-	see also 7199 line
7210	BCL11A	NM.018011.2	2386	ggagagcaagccccaattttatgg	365324	525522	-	-	see also 7199 line
7211	FJ10178	NM.018015.2	164	ctctgatactatgaaaacctcga	365325	525523	-	-	see also 7199 line
7212	SLG384A	NM.018016.2	1351	ctccgcgcgcctcttgcacttc	365332	788141	-	-	-
7213	FJ10210	NM.018027.2	1091	tccaatgtgactcaactgatataa	259747	642004	-	-	-
7214	LUO7L	NM.018032.2	234	tggcttggaacgcactcagtttata	322883	714226	-	-	-
7215	FJ10244	NM.018037.1	739	tggcgttttaaatcagaagaaga	295768	664418	-	-	signal transduction
7216	FJ10244	NM.018037.1	739	agcgttttaaatcagaagaaga	295769	664417	-	-	see also 7215 line
7217	FJ10305	NM.018052.3	867	gtatgcttcagaacttaaaccttc	365323	761297	-	-	-
7218	RICH1	NM.018054.3	1176	gtttctcagatgaagaacaaaaa	99039	753280	-	-	-
7219	RICH1	NM.018054.3	1176	caccacaaatttttgaacttt	99042	753283	-	-	see also 7218 line
7220	NIT73	NM.018057.2	1027	gaattctgcccacactttctct	255863	640046	-	-	-
7221	FJ10326	NM.018060.2	241	tggcaatcagatctctatagaga	82478	814266	-	-	-
7222	FJ10328	NM.018060.2	242	agcacaagctctctatagaga	82479	814267	-	-	see also 7221 line
7223	FJ10328	NM.018060.2	536	ggcttctgtttctatgactacaa	82486	814270	-	-	see also 7221 line

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7224	FLJ10326	NM.018060.2	540	ttgattatgattctcaaac	82487	814277	see also 7221 line	
7225	FLJ10326	NM.018060.2	1476	ttgcaaacctctgagctatctt	82518	814311	see also 7221 line	
7226	FLJ10330	NM.018061.1	273	ttcttgctctcttctctctcaaa	365924	719589	-	-
7227	FLJ10330	NM.018061.1	275	ttcttgctctcttctctctcaaa	365945	719593	see also 7226 line	
7228	FLJ10330	NM.018061.1	277	ttcttgctctcttctctctcaaa	365948	719590	see also 7226 line	
7229	FLJ10330	NM.018061.1	330	ttcttgctctcttctctctcaaa	365948	719592	see also 7226 line	
7230	FLJ10330	NM.018061.1	488	ttcttgctctcttctctctcaaa	365949	719594	see also 7226 line	
7231	HELLS	NM.018063.3	1248	ttcttgctctcttctctctcaaa	28096	697038	-	-
7232	FLJ10375	NM.018067.2	1055	ttcttgctctcttctctctcaaa	366212	749497	-	-
7233	FLJ10375	NM.018075.2	1056	ttcttgctctcttctctctcaaa	366213	749498	see also 7232 line	
7234	FLJ10377	NM.018077.1	2137	ttcttgctctcttctctctcaaa	366309	749818	-	-
7235	FLJ10378	NM.018078.2	362	ttcttgctctcttctctctcaaa	366310	758964	-	-
7236	FLJ10378	NM.018078.2	363	ttcttgctctcttctctctcaaa	366310	758965	see also 7235 line	
7237	FLGN	NM.018066.1	337	ttcttgctctcttctctctcaaa	82305	502376	-	-
7238	FLGN	NM.018066.1	1529	ttcttgctctcttctctctcaaa	82331	502404	see also 7237 line	
7239	FLGN	NM.018066.1	1601	ttcttgctctcttctctctcaaa	82334	502408	see also 7237 line	
7240	FLGN	NM.018066.1	1653	ttcttgctctcttctctctcaaa	82338	502409	see also 7237 line	
7241	FLGN	NM.018066.1	1657	ttcttgctctcttctctctcaaa	82340	502410	see also 7237 line	
7242	FLGN	NM.018066.1	1767	ttcttgctctcttctctctcaaa	82348	502415	see also 7237 line	
7243	FLGN	NM.018066.1	1770	ttcttgctctcttctctctcaaa	82349	502415	see also 7237 line	
7244	FLGN	NM.018066.1	1771	ttcttgctctcttctctctcaaa	82350	502418	see also 7237 line	
7245	FLGN	NM.018066.1	1773	ttcttgctctcttctctctcaaa	82351	502417	see also 7237 line	
7246	FLGN	NM.018066.1	1965	ttcttgctctcttctctctcaaa	82359	502422	see also 7237 line	
7247	FLGN	NM.018066.1	1968	ttcttgctctcttctctctcaaa	82360	502423	see also 7237 line	
7248	FLGN	NM.018066.1	1969	ttcttgctctcttctctctcaaa	82361	502424	see also 7237 line	
7249	FLJ10407	NM.018087.3	1059	ttcttgctctcttctctctcaaa	366526	734260	-	-
7250	FLJ10407	NM.018087.3	1308	ttcttgctctcttctctctcaaa	366534	734272	see also 7249 line	
7251	FLJ10407	NM.018087.3	1840	ttcttgctctcttctctctcaaa	366534	734285	see also 7249 line	
7252	FLP3	NM.018091.3	46	ttcttgctctcttctctctcaaa	215083	602379	-	-
7253	FLJ10439	NM.018093.1	1079	ttcttgctctcttctctctcaaa	366637	751055	-	-
7254	EC72	NM.018096.4	541	ttcttgctctcttctctctcaaa	295691	664559	kinase related	guany-nucleotide release factor
7255	EC72	NM.018096.4	650	ttcttgctctcttctctctcaaa	295697	664566	see also 7254 line	
7256	FL1047 30	NM.018108.2	1113	ttcttgctctcttctctctcaaa	227658	615174	-	-
7257	FLJ10486	NM.018109.2	1048	ttcttgctctcttctctctcaaa	61024	478060	-	-
7258	FLJ10486	NM.018109.2	1051	ttcttgctctcttctctctcaaa	61025	478061	see also 7257 line	
7259	LMR	NM.018113.1	193	ttcttgctctcttctctctcaaa	249751	577493	-	-
7260	WDR11	NM.018117.1	322	ttcttgctctcttctctctcaaa	138605	577433	-	-
7261	WDR11	NM.018117.1	2556	ttcttgctctcttctctctcaaa	138676	577498	see also 7260 line	
7262	WDR11	NM.018117.1	2557	ttcttgctctcttctctctcaaa	138677	577499	see also 7260 line	
7263	WDR11	NM.018117.1	3664	ttcttgctctcttctctctcaaa	138703	577526	see also 7260 line	
7264	RP05	NM.018119.2	2243	ttcttgctctcttctctctcaaa	208771	598535	transcription_regulat	or
7265	O10orf6	NM.018121.2	3317	ttcttgctctcttctctctcaaa	306923	777604	-	-

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7266	FLJ10514	NM.0181223	999	atgcggagatctctctgaatct	82596	480171	-	-	-
7267	FLJ10514	NM.0181223	1894	aacactatgacttgcttaaat	82626	480195	-	-	-
7268	FLJ10521	NM.0181252	807	cagcactatgagcactcttgg	366793	773523	-	-	-
7269	FLJ10525	NM.0181261	377	tgcattctatgacacataaa	290075	686649	-	-	-
7270	PINO	NM.0181261	420	tgctctccgtctctcaact	225920	612533	-	-	-
7271	ASPM	NM.0181362	4997	ggctcttcagaccataatgat	367337	700035	-	-	-
7272	ASPM	NM.0181362	6140	caftcactatacactcaaat	367402	700087	see also 7271 line	-	-
7273	FLJ10569	NM.0181421	578	gttatctctctctcaaat	367609	730170	-	-	-
7274	FLJ10569	NM.0181421	752	aactgactctctgaatgacata	367618	730178	see also 7273 line	-	-
7275	FLJ10569	NM.0181421	753	acgtgactctgaatgacata	367619	730179	see also 7273 line	-	-
7276	FLJ10569	NM.0181421	756	tgctctctgaatgacataag	367620	730180	see also 7273 line	-	-
7277	FLJ10572	NM.0181431	1254	gcgcaggtttctaaacactag	131267	532599	-	-	-
7278	FLJ10572	NM.0181431	1625	tgccctctctgacactctc	131278	532612	see also 7277 line	-	-
7279	FLJ10572	NM.0181431	1808	ggacacactctctctctctaa	131281	532616	see also 7277 line	-	-
7280	SEC61A	NM.0181442	1007	atgctctctctctctctctct	255619	639601	-	-	-
7281	FLJ10581	NM.0181462	595	caacctctctctctctctct	51626	472798	-	-	-
7282	FLJ10581	NM.0181462	596	caacctctctctctctctct	51627	472800	see also 7281 line	-	-
7283	FLJ10581	NM.0181462	642	tgcctctctctctctctctct	51629	472801	see also 7281 line	-	-
7284	FLJ10581	NM.0181462	923	cctctgagccctctctctctct	249531	620648	-	-	-
7285	FLJ10587	NM.0181492	1220	cagcctcagctctctctctct	249543	620649	see also 7284 line	-	-
7286	FLJ10587	NM.0181492	2600	ctctctctcagcagctctctct	249568	620684	see also 7284 line	-	-
7287	FLJ10587	NM.0181492	2601	tggtctctcagcagctctctct	249589	620695	see also 7284 line	-	-
7288	hSyn	NM.0181571	232	tggcctctctctctctctctct	367780	808719	-	-	-
7289	hSyn	NM.0181571	1104	agctctctctctctctctctct	367811	808746	see also 7288 line	-	-
7290	hSyn	NM.0181571	1499	tgtctctctctctctctctct	367820	808762	see also 7288 line	-	-
7291	FLJ10637	NM.0181641	1432	tacagctctctctctctctct	367855	752724	see also 7291 line	-	-
7292	FLJ10637	NM.0181641	1434	cagcactctctctctctctct	367855	752724	see also 7291 line	-	-
7293	FLJ10637	NM.0181641	1436	gactctctctctctctctctct	367855	752724	see also 7291 line	-	-
7294	FLJ10637	NM.0181641	1496	gacccagctctctctctctct	367855	752724	see also 7291 line	-	-
7295	FLJ10637	NM.0181641	1613	atgcagcctctctctctctct	367863	752741	see also 7291 line	-	-
7296	FLJ10637	NM.0181641	1697	tctcaactctctctctctct	367866	752748	see also 7291 line	-	-
7297	PB1	NM.0181652	3633	ctctctcagcactctctctct	18871	453313	transcription_regulat	-	-
7298	PB1	NM.0181652	3733	agttttctctctctctctct	18874	453317	see also 7297 line	-	-
7299	LG2	NM.0181762	340	ctgtctctctctctctctct	367999	755231	-	-	-
7300	LG2	NM.0181762	1551	cacccagcagcagcagcagc	368028	755251	see also 7299 line	-	-
7301	LG2	NM.0181762	1552	acccagcagcagcagcagc	368029	755252	see also 7299 line	-	-
7302	GP234R	NM.0181763	425	ccagcagcagcagcagcagc	368041	750545	-	-	-
7303	GP234R	NM.0181763	511	ccagcagcagcagcagcagc	368046	750547	see also 7302 line	-	-
7304	A1F7P	NM.0181763	2086	agccagcagcagcagcagc	322525	525846	-	-	-
7305	A1F7P	NM.0181763	2631	ggagcagcagcagcagcagc	325269	525858	see also 7304 line	-	-
7306	A1F7P	NM.0181763	3461	aacacacacacacacacac	325288	525890	see also 7304 line	-	-
7307	FLJ10700	NM.0181821	327	tctcaagcagcagcagcagc	368139	756431	-	-	-

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7308	FLJ10700	NM_018182.1	921	ctcaactatccctcccttaactg	368142	756436	see also 7307 line
7309	BBS7	NM_018190.1	923	ctccctctctctctgaagctta	368262	730921	-
7310	BBS7	NM_018190.2	2030	tgcataaaagctccagcttaatt	368268	730963	see also 7309 line
7311	MLAT4	NM_018192.2	2068	ctgaagctctctctataacaaa	225514	699776	-
7312	TMLHE	NM_018196.1	1030	tgcctctgaagctctatgaatt	224603	611018	-
7313	ZFP64	NM_018197.2	730	tgcacatctctctctacaaaagc	43962	699638	transcription_regulat or
7314	G1orf114	NM_018199.1	744	tggctctattctgcagaactca	58317	481886	transcription_regulat or
7315	HMG20A	NM_018200.2	514	tcctccctctctctgaatcttcg	4952	460250	or
7316	HMG20A	NM_018200.2	672	cagagataagagctgacttaaga	4955	460253	see also 7315 line
7317	HMG20A	NM_018200.2	674	gaagataagagcttaactcaag	4956	460254	see also 7315 line
7318	HMG20A	NM_018200.2	754	gaacctcaaaagaaacaaactca	4957	460256	see also 7315 line
7319	VPS35	NM_018206.2	395	caattgagctgctctctctcaag	137058	683008	-
7320	VPS35	NM_018206.2	391	gacttctctctctgaagcttaatt	137059	653009	see also 7319 line
7321	ARGAP1	NM_018209.2	340	gcctctgagagagctgaagcttc	21503	454973	-
7322	ENAH	NM_018212.2	1505	gcctctgaatcagcctcttaact	368495	528862	-
7323	PANK4	NM_018216.1	1860	tgcctctattctctgcgttaaca	95600	782093	kinase related
7324	PANK4	NM_018216.1	1872	cgatataaagagctgaatagaac	95661	782096	see also 7323 line
7325	PANK4	NM_018216.1	1874	cgatataaagctgaatagaatca	95662	782096	see also 7323 line
7326	PANK4	NM_018216.1	1881	catctgataagactcattcttg	95663	782097	see also 7323 line
7327	C2orf431	NM_018217.1	757	cttgcagagcagctctgaatctg	138431	543703	-
7328	CHFR	NM_018223.1	408	acgtgcacactctctatgaact	306686	777938	-
7329	RNPEPL1	NM_018226.2	1038	ggactactctctctgctctaac	186409	478131	membrane alanyl aminopeptidase
7330	CARP-1	NM_018237.1	148	cpctatgagctctgaactgaac	23554	453367	-
7331	CARP-1	NM_018237.1	293	agcaaatatcatctctaaacaaa	23589	453372	see also 7330 line
7332	CARP-1	NM_018237.1	728	gaactatcaatctctacccaactc	23602	453383	see also 7330 line
7333	CARP-1	NM_018237.1	727	gaactatcaatctctacccaactc	23603	453384	see also 7330 line
7334	CARP-1	NM_018237.1	1473	atgcctgagcctctctctgagaaga	23621	453407	see also 7330 line
7335	CARP-1	NM_018237.1	1558	atctctgctctactctctgaattg	23625	453410	see also 7330 line
7336	CARP-1	NM_018237.1	1559	tcctgctgactctctctctgaattt	23626	453411	see also 7330 line
7337	CARP-1	NM_018237.1	1743	tgctgctgactctctctgaattgct	23637	453418	see also 7330 line
7338	CARP-1	NM_018237.1	1785	accacgaagctctctctgaattgc	23638	453419	see also 7330 line
7339	FLJ10842	NM_018238.2	441	catctgagctctctctctgaatga	208439	597966	kinase related
7340	FLJ10842	NM_018238.2	555	atccacatctctctctctctgaac	208441	597972	see also 7339 line
7341	FLJ10847	NM_018242.2	1353	atccagatctctctctctctcttc	258586	643019	-
7342	FLJ10853	NM_018246.1	307	cttgcagatgaacacacttaag	368974	758558	-
7343	FLJ10853	NM_018246.1	308	tcgaatgtatcaacagcttaagtc	368975	758559	-
7344	C6orf67	NM_018247.1	547	tgcctgataactctctgctgataag	278013	747560	see also 7342 line
7345	C6orf67	NM_018247.1	1175	tgcctgataactctctgctgataag	278013	747560	see also 7342 line
7346	FLJ10876	NM_018254.2	241	atccagatgaacacactctcttcg	28717	456631	-
7347	MDR10	NM_018262.2	2096	atccagatgaacacactctcttcg	368362	742846	-
7348	ASXL2	NM_018263.2	130	gcgcacgaagctctctctgaaa	368409	773392	-

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7349	ASXL2	NM_018263.2	131	cgcgcgaacagcgtctgagaaa	369410	772393	see also 7348 line
7350	ASXL2	NM_018263.2	1144	ttgcgcgaacagcgtctgagaaa	369430	773409	see also 7348 line
7351	ASXL2	NM_018263.2	2970	ttgcgcgaacagcgtctgagaaa	369469	773450	see also 7348 line
7352	ASXL2	NM_018263.2	4046	cgcgcgaacagcgtctgagaaa	369502	773473	see also 7348 line
7353	ASXL2	NM_018263.2	4059	ttgcgcgaacagcgtctgagaaa	369503	773481	see also 7348 line
7354	ASXL2	NM_018263.2	4059	ttgcgcgaacagcgtctgagaaa	369504	773482	see also 7348 line
7355	ASXL2	NM_018263.2	4126	ttgcgcgaacagcgtctgagaaa	369505	773486	see also 7348 line
7356	ASXL2	NM_018263.2	4126	ttgcgcgaacagcgtctgagaaa	369543	774807	-
7357	FLJ10902	NM_018266.1	1317	ttgcgcgaacagcgtctgagaaa	369546	774808	see also 7356 line
7358	FLJ10902	NM_018266.1	1514	ttgcgcgaacagcgtctgagaaa	369547	774809	see also 7356 line
7359	FLJ10902	NM_018266.1	1729	ttgcgcgaacagcgtctgagaaa	369558	774815	see also 7356 line
7360	FLJ10922	NM_018273.2	214	ttgcgcgaacagcgtctgagaaa	369619	775387	-
7361	FLJ10922	NM_018273.2	1321	ttgcgcgaacagcgtctgagaaa	369673	776297	-
7362	PSPC1	NM_018282.1	980	ttgcgcgaacagcgtctgagaaa	369706	738418	-
7363	ARRHGAP1	NM_018287.4	657	ttgcgcgaacagcgtctgagaaa	369707	738423	see also 7363 line
7364	ARRHGAP1	NM_018287.4	755	ttgcgcgaacagcgtctgagaaa	369732	738443	see also 7363 line
7365	ARRHGAP1	NM_018287.4	1361	ttgcgcgaacagcgtctgagaaa	369733	738444	see also 7363 line
7366	ARRHGAP1	NM_018287.4	1364	ttgcgcgaacagcgtctgagaaa	369747	738459	see also 7363 line
7367	ARRHGAP1	NM_018287.4	1951	ttgcgcgaacagcgtctgagaaa	369748	738460	see also 7363 line
7368	ARRHGAP1	NM_018287.4	1953	ttgcgcgaacagcgtctgagaaa	369748	738460	see also 7363 line
7369	PHF10	NM_018288.2	378	ttgcgcgaacagcgtctgagaaa	34654	452992	transcription regulat
7370	PHF10	NM_018288.2	1138	ttgcgcgaacagcgtctgagaaa	34673	453012	or
7371	PHF10	NM_018288.2	1264	ttgcgcgaacagcgtctgagaaa	34678	453020	see also 7369 line
7372	NGLY1	NM_018297.2	1354	ttgcgcgaacagcgtctgagaaa	369944	594004	-
7373	FLJ11016	NM_018301.2	516	ttgcgcgaacagcgtctgagaaa	61075	482452	-
7374	SEC5	NM_018303.4	910	ttgcgcgaacagcgtctgagaaa	270393	717959	-
7375	SEC5	NM_018303.4	1081	ttgcgcgaacagcgtctgagaaa	270396	717969	see also 7374 line
7376	SEC5	NM_018303.4	1084	ttgcgcgaacagcgtctgagaaa	270397	717970	see also 7374 line
7377	SEC5	NM_018303.4	2512	ttgcgcgaacagcgtctgagaaa	270434	717422	see also 7374 line
7378	ARH1	NM_018307.2	351	ttgcgcgaacagcgtctgagaaa	108428	518998	signal transduction
7379	ARH1	NM_018307.2	422	ttgcgcgaacagcgtctgagaaa	108429	518900	see also 7378 line
7380	ARH1	NM_018307.2	865	ttgcgcgaacagcgtctgagaaa	108439	518914	see also 7378 line
7381	ARH1	NM_018307.2	869	ttgcgcgaacagcgtctgagaaa	108440	518915	see also 7378 line
7382	ARH1	NM_018307.2	869	ttgcgcgaacagcgtctgagaaa	108473	518936	see also 7378 line
7383	ARH1	NM_018307.2	1574	ttgcgcgaacagcgtctgagaaa	108473	518936	see also 7378 line
7384	FLJ11046	NM_018308.1	88	ttgcgcgaacagcgtctgagaaa	370031	723063	-
7385	FLJ11046	NM_018308.1	206	ttgcgcgaacagcgtctgagaaa	370035	723068	see also 7384 line
7386	FLJ11046	NM_018308.1	214	ttgcgcgaacagcgtctgagaaa	370037	723070	see also 7384 line
7387	FLJ11046	NM_018308.1	1979	ttgcgcgaacagcgtctgagaaa	370093	723115	see also 7384 line
7388	C11orf23	NM_018312.2	650	ttgcgcgaacagcgtctgagaaa	370105	739212	-
7389	C11orf23	NM_018312.2	938	ttgcgcgaacagcgtctgagaaa	370117	739212	-
7391	C11orf23	NM_018312.2	1649	ttgcgcgaacagcgtctgagaaa	370136	739248	see also 7389 line

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7392	C11orf23	NM_018312.2	1889	tgacacaaatgaagctccaatttt	370138	739550	see also 7389 line
7393	C11orf23	NM_018312.2	1892	taacaaatgagccaaatttt	370139	739551	see also 7389 line
7394	FBXW7	NM_018315.2	308	taacaaatgagcttctacg	370162	443810	-
7395	FBXW7	NM_018315.2	319	agagttcttccggacattaaa	370163	443811	see also 7394 line
7396	FBXW7	NM_018315.2	320	tgagttcttccggacattaaa	370164	443812	see also 7394 line
7397	FBXW7	NM_018315.2	321	tgagttcttccggacattaaa	370165	443813	see also 7394 line
7398	FBXW7	NM_018315.2	1519	tgagttcttccggacattaaa	370201	443839	see also 7394 line
7399	FLJ11082	NM_018317.1	605	tgacacaaatgagcttctacg	370217	753093	-
7400	TDP1	NM_018319.2	1000	tgacacaaatgagcttctacg	199018	754207	-
7401	TDP1	NM_018319.2	1027	tgacacaaatgagcttctacg	199019	754211	see also 7400 line
7402	TDP1	NM_018319.2	1620	tgagttcttccctctagcttc	199041	754222	see also 7400 line
7403	RNF121	NM_018320.3	412	tgacacaaatgagcttctacg	370285	738138	-
7404	BRX	NM_018321.2	247	atgttgagcttctctctaaagc	370303	678207	-
7405	BRX	NM_018321.2	787	aaacttgatgagcttctctaaagc	370320	678226	see also 7404 line
7406	BRX	NM_018321.2	791	tgatctgagcttctctaaagc	370322	678227	see also 7404 line
7407	LRRN3	NM_018334.3	778	tgatctgagcttctctaaagc	370439	701473	-
7408	LRRN3	NM_018334.3	1953	atgtctgagcttctctaaagc	370488	701533	see also 7407 line
7409	LRRN3	NM_018334.3	2457	atgtctgagcttctctaaagc	370507	701542	see also 7407 line
7410	RIOK2	NM_018343.1	258	tcacagcttctctctaaagc	283310	686704	-
7411	RIOK2	NM_018343.1	260	tcacagcttctctctaaagc	283311	686705	see also 7410 line
7412	ABCF3	NM_018365.1	642	atgttgagcttctctctaaagc	210555	492837	-
7413	FLJ11200	NM_018359.1	1406	atgttgagcttctctctaaagc	370738	752497	-
7414	LPAA1-e	NM_018361.1	183	atgttgagcttctctctaaagc	215531	602647	-
7415	LPAA1-e	NM_018361.1	184	atgttgagcttctctctaaagc	215532	602648	see also 7414 line
7416	LPAA1-e	NM_018361.1	180	atgttgagcttctctctaaagc	215534	602649	see also 7414 line
7417	FLJ11220	NM_018364.2	834	tgacacaaatgagcttctacg	370804	777541	-
7418	FLJ11220	NM_018364.2	840	tgacacaaatgagcttctacg	370806	777542	see also 7417 line
7419	FLJ11220	NM_018364.2	1214	atgttgagcttctctctaaagc	370823	777550	see also 7417 line
7420	PHCA	NM_018367.3	273	tgacacaaatgagcttctacg	205409	596103	-
7421	PHCA	NM_018367.3	516	tgacacaaatgagcttctacg	205416	596113	see also 7420 line
7422	PHCA	NM_018367.3	520	atgttgagcttctctctaaagc	205417	596114	see also 7420 line
7423	XTP1	NM_018365.1	819	tgatctgagcttctctctaaagc	371555	690567	-
7424	FLJ11259	NM_018370.1	453	atgttgagcttctctctaaagc	370894	731206	-
7425	FLJ11259	NM_018370.1	454	atgttgagcttctctctaaagc	370895	731207	see also 7424 line
7426	ChGn	NM_018371.3	1426	atgttgagcttctctctaaagc	218544	606422	-
7427	ChGn	NM_018371.3	1428	atgttgagcttctctctaaagc	218545	606423	see also 7426 line
7428	ChGn	NM_018371.3	1429	atgttgagcttctctctaaagc	218546	606424	see also 7426 line
7429	FLJ11294	NM_018383.2	1941	gtctcagcttctctctaaagc	280182	655029	-
7430	FLJ11294	NM_018383.2	4095	gtctcagcttctctctaaagc	280189	655040	see also 7429 line
7431	FLJ11294	NM_018383.2	4097	gtctcagcttctctctaaagc	280200	655041	see also 7429 line
7432	STRBP	NM_018387.2	928	atgttgagcttctctctaaagc	43929	472119	-
7433	STRBP	NM_018387.2	1127	atgttgagcttctctctaaagc	43930	472122	see also 7432 line

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7434	STRBP	NM_018391.2	1222	ggagcgcacatgaagctttttg	48942	472127	see also 7432 line
7435	STRBP	NM_018391.2	2157	ctggacacacacggcgcacataat	48958	472151	see also 7432 line
7436	STRBP	NM_018391.2	2161	accacatggcgcacacataataga	48970	472152	see also 7432 line
7437	FLJ11336	NM_018393.2	1670	ctgcgcctggcgcacataacacag	371138	753579	-
7438	FLJ11338	NM_018393.2	1701	ctgcctctactcaactgaatcc	371139	753582	see also 7437 line
7439	CHDH	NM_018397.1	1731	acccttcctgcacctctagatgc	228461	172106	-
7440	CAONA2D	NM_018398.1	452	accacagcactgaacacacaaag	328427	694345	-
7441	CAONA2D	NM_018398.1	501	tgctctatctctaaacaaagt	328427	694345	-
7442	CAONA2D	NM_018398.1	1019	ggcctcatctgcataactgatg	328440	694353	see also 7440 line
7443	CAONA2D	NM_018398.1	1366	tgacccctgactctcttttagaag	328449	694361	see also 7440 line
7444	CAONA2D	NM_018398.1	1755	atcaaggactctctcttcctgttt	328461	694377	see also 7440 line
7445	CAONA2D	NM_018398.1	1758	aaggctactctctctctcttttagg	328462	694378	see also 7440 line
7446	VNN3	NM_018399.2	589	acgttaccatctgaactctttt	203558	594459	-
7447	SCN3B	NM_018400.2	1004	ggcctctgaagattctcttatt	262249	647235	channel
7448	HS424598	NM_018400.1	372	acacacacacactctcagagaaa	371153	747920	-
7449	CEN1A2	NM_018404.1	673	caagctccacactctctctctaa	23984	457111	-
7450	S17	NM_018412.2	515	ggagcttgtagcaacacactctcc	371250	712438	-
7451	S17	NM_018412.2	584	tgctctgaagctgaacaaatctgg	371252	712441	see also 7450 line
7452	S17	NM_018412.2	1585	baccacactctcagaaacacac	371281	712475	see also 7450 line
7453	CHST11	NM_018413.2	1280	caactctgaaagctcacaact	218568	605562	-
7454	TRERF1	NM_018415.1	1027	aaggcacaactctgttagcctac	42985	469904	transcription_regulat
7455	TRERF1	NM_018415.1	1028	aggcgcactctatctagctctcc	42886	469905	or
7456	TRERF1	NM_018415.1	2419	ctgtgaacccctcagacactatt	42895	469910	see also 7454 line
7457	TRERF1	NM_018415.1	2717	ctgttcctcttgcaatactc	42900	469923	see also 7454 line
7458	TRERF1	NM_018415.1	2801	caactctcagaagctcttatt	42903	469926	see also 7454 line
7459	FHX	NM_018416.2	1541	aagacacccctccagctgatactc	3689	444015	transcription_regulat
7460	FHX	NM_018416.2	2453	gaacctgcacacactccatctg	3680	444020	regulator
7461	EPB41L4B	NM_018424.1	582	agctgtgaactccggaacatcgc	273441	656499	-
7462	EPB41L4B	NM_018424.1	1161	ctgaacccctccggaactatatt	273441	656516	see also 7461 line
7463	EPB41L4B	NM_018424.1	1163	gaacccctccggaactatatt	273454	656517	see also 7461 line
7464	EPB41L4B	NM_018424.1	1165	ccgcgcagcagctatattctct	273456	656518	see also 7461 line
7465	EPB41L4B	NM_018424.1	1166	ccggaagcagctatattctctg	273458	656520	see also 7461 line
7466	EPB41L4B	NM_018424.1	1182	atctttgaagcagctatattctg	273458	656520	see also 7461 line
7467	PI4K1	NM_018425.2	684	ccgtacaaagcagctatattctg	207982	597807	kinase_related
7468	PI4K1	NM_018425.2	1131	ctgaagcagctatattcttact	207989	597812	see also 7467 line
7469	DOK5	NM_018431.2	647	ttagtgcagctctccactctaga	170553	567107	-
7470	RNF130	NM_018434.4	493	acgcgcagcagcagctactcaga	191635	565179	-
7471	RNF130	NM_018434.4	868	ctctcagctctcagcagcttaggg	191645	565185	see also 7470 line
7472	RNF130	NM_018434.4	986	ctctcagctctctcgcctctctat	191650	565189	see also 7470 line
7473	RNF130	NM_018434.4	1062	caagaagcagcagcagcagctgc	191653	565193	see also 7470 line
7474	RNF130	NM_018434.4	1126	asgctcagcagcagcagcagc	191654	565194	see also 7470 line

7475	RNF130	NM_0184344	1310	tctatctgcgaacttatataat	191657	585201	see also 7470 line
7476	RNF130	NM_0184344	1539	acacatcatctctacacaaaga	191663	585210	see also 7470 line
7477	RNF130	NM_0184344	1628	caacagctgcctgacgaatgag	191665	585211	see also 7470 line
7478	PBX06	NM_0184382	518	agctcaaaagattgtgtccaa	371545	706118	-
7479	IMPACT	NM_0184391	112	gaagatgagtgatctctgttga	280925	667318	-
7480	SELS	NM_0184445	239	tgaaactctctgtctgtctttaa	327348	715425	receptor activity
7481	AD-017	NM_0184446	972	caactctctctctctctatatt	212046	600438	-
7482	AD-017	NM_0184446	973	caactctctctctctctatatt	212047	600439	see also 7481 line
7483	AD-017	NM_0184461	976	tctctctctctctctctatatt	212048	600441	see also 7481 line
7484	LOC58831	NM_0184471	686	actctgactctctctcaatgag	371569	785469	-
7485	ARHGAP1	NM_0184602	588	tctctctctctctcaatgag	371832	771272	-
7486	ARHGAP1	NM_0184602	974	ttctctctctctcaatgag	371848	771284	see also 7485 line
7487	WDS027	NM_0184623	185	ttctctctctctcaatgag	371877	749216	-
7488	WDS027	NM_0184623	187	actctgacacagatgataatgct	371878	749217	see also 7487 line
7489	WDS027	NM_0184623	194	actctgacacagatgataatgct	371879	749218	see also 7487 line
7490	C9orf46	NM_0184651	352	ctctctctctctctctcaatg	371888	724320	-
7491	C9orf46	NM_0184651	354	ctctctctctctctctcaatg	371889	724321	see also 7490 line
7492	ACTR10	NM_0184771	285	agaacttatctctctctcaag	286251	531617	-
7493	ACTR10	NM_0184771	275	tctctctctctcaagactctctc	286252	531618	see also 7492 line
7494	ACTR10	NM_0184771	463	ttctctctctctcaagactctc	286263	531626	see also 7492 line
7495	ASH1L	NM_0184891	2485	agcacatctccctctctcaaaag	21630	455113	transcription_regulat or
7496	ASH1L	NM_0184891	2636	aaagcctctctctctcaaatgac	21640	455125	see also 7495 line
7497	ASH1L	NM_0184891	3614	ttctctctctctctcaatgac	21664	455155	see also 7495 line
7498	ASH1L	NM_0184891	3729	caagcagcagcagatgattctaa	21668	455159	see also 7495 line
7499	ASH1L	NM_0184891	5720	aaagcagcagcagatgattctaa	21719	455217	see also 7495 line
7500	ASH1L	NM_0184891	5726	aaagcagcagcagatgattctaa	21720	455218	see also 7495 line
7501	ASH1L	NM_0184891	5727	aaagcagcagcagatgattctaa	21721	455219	see also 7495 line
7502	ASH1L	NM_0184891	6480	ttctctctctctctcaatgac	21741	455231	see also 7495 line
7503	ASH1L	NM_0184891	8457	ttctctctctctctcaatgac	21798	455280	see also 7495 line
7504	ASH1L	NM_0184891	8655	ctctctctctctctcaatgac	21812	455283	see also 7495 line
7505	ASH1L	NM_0184891	8792	actctctctctctctcaatgac	21813	455289	see also 7495 line
7506	FLJ22054	NM_0185272	1343	ttctctctctctctcaatgac	387276	719460	-
7507	FLJ22054	NM_0185272	1346	ttctctctctctctcaatgac	387277	719461	see also 7506 line
7508	HSA21784	NM_0185531	216	ttctctctctctctcaatgac	372190	719237	-
7509	HSA21784	NM_0185531	290	actctgactctctctctcaatg	372191	719239	see also 7508 line
7510	HSA21784	NM_0185531	294	actctgactctctctctcaatg	372192	719240	see also 7508 line
7511	HSA21784	NM_0185531	794	aaagcagcagcagatgataatg	372204	719249	see also 7508 line
7512	LRP1B	NM_0185571	2635	ctctgacacacacacacacac	31100	549537	receptor activity
7513	LRP1B	NM_0185571	8178	ctctgacacacacacacacac	31223	549627	see also 7512 line
7514	LRP1B	NM_0185571	8953	ttctctctctctctcaatgac	31254	549655	see also 7512 line
7515	LRP1B	NM_0185571	8955	ctctgacacacacacacacac	31255	549654	see also 7512 line
7516	LRP1B	NM_0185571	10497	actctgactctctctcaatgac	31361	549755	see also 7512 line
7517	LRP1B	NM_0185571	10501	atgacacacacacacacacac	31362	549756	see also 7512 line

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7518	LRP1B	NM_018557.1	10503	ggcactaacacagatgttgtta	31363	549757	see also 7512 line		
7519	LRP1B	NM_018557.1	10507	ggcactaacacagatgttgtta	31367	549763	see also 7512 line		
7520	LRP1B	NM_018557.1	12397	gactattccatctgaaagacac	31386	549794	see also 7512 line		
7521	LRP1B	NM_018557.1	13945	ttgcacacatctctgttgatc	31468	549875	see also 7512 line		
7522	LRP1B	NM_018557.1	14018	cgcctatgaaagacacaaatgt	31473	549877	see also 7512 line		
7523	LRP1B	NM_018557.1	14584	cctccacatctctctaaactctga	31485	549903	see also 7512 line	receptor activity, channel,	neurotransmitter transporter
7524	GABRO	NM_018558.1	1171	acgtgcagagtgacctgtttaac	178839	572071	signal transduction	-	-
7525	MGO20741	NM_018561.3	1570	ctcagctcagctccacatgttatct	188585	582172	-	-	-
7526	MGO20741	NM_018561.3	1581	caactgttatcttgcaattca	188586	582174	see also 7525 line	-	-
7527	ALS2CR2	NM_018571.4	879	tggacttatctgcacaaaatgg	72016	493781	kinase, related	-	-
7528	-2	NM_018590.3	822	ctcactctgacctctgaagaaga	218692	741612	-	-	-
7529	-2	NM_018590.3	1091	cccttttgacctctctgaag	218696	741621	see also 7528 line	-	-
7530	GALNACT	NM_018590.3	1096	ttgacctctctctgaag	218697	741622	see also 7528 line	-	-
7531	DNAJ4	NM_018602.2	361	ccgagatggcagcagaagttta	293353	688426	-	-	-
7532	DNAJ4	NM_018602.2	626	ttgacctctctctgaag	293360	688432	see also 7531 line	-	-
7533	DNAJ4	NM_018602.2	627	ttgacctctctctgaag	293361	688433	see also 7531 line	-	-
7534	CHST12	NM_018641.2	1327	ctcctccctcagaacattctact	218575	606516	-	-	-
7535	NOL43	NM_018648.2	227	ctcctccctcagaacattctact	218575	606516	-	-	-
7536	MARK1	NM_018650.2	2804	caccgaatactctctcagaag	282604	716199	-	-	-
7537	MARK1	NM_018650.2	2805	ggcgaatactctctcagaag	90231	507836	kinase, related	-	-
7538	MYNN	NM_018657.2	1578	ggcgaatactctctcagaag	90232	507837	see also 7536 line	-	-
7539	SMPP3	NM_018667.1	1448	ttcctcagagcgtctcacaacaa	7311	537836	transcription, regulat	-	-
7540	VPS33B	NM_018668.2	837	gaatcgaatctctcagaatctacc	199000	591016	-	-	-
7541	VPS33B	NM_018668.2	1153	gaatcgaatctctcagaatctacc	271391	652966	-	-	-
7542	VPS33B	NM_018668.2	1769	ggcctcgaatctctcagaatctacc	271394	652971	see also 7540 line	-	-
7543	VPS33B	NM_018668.2	1786	tcgcagagagcgaatctctcgaat	271409	652990	see also 7540 line	-	-
7544	ABCA5	NM_018672.2	1257	ggcgaatctctcagaatctctcga	271410	652991	see also 7540 line	-	-
7545	ABCA5	NM_018672.2	1623	gtctcgaatctctcagaatctctcga	68951	490541	-	-	-
7546	ABCA5	NM_018672.2	4132	gtctcgaatctctcagaatctctcga	68964	490555	see also 7544 line	-	-
7547	ABCA5	NM_018672.2	5765	gtctcgaatctctcagaatctctcga	69044	491029	see also 7544 line	-	-
7548	ACGN4	NM_018674.3	993	gtctcgaatctctcagaatctctcga	69091	491078	see also 7544 line	-	-
7549	ACGN4	NM_018674.3	1419	gtctcgaatctctcagaatctctcga	262538	645992	channel	-	-
7550	ACAS2	NM_018677.2	925	ggcttctcgaatctctcagaatctctcga	262544	645997	-	-	-
7551	ACAS2	NM_018677.2	1154	ggcttctcgaatctctcagaatctctcga	108108	617417	see also 7548 line	-	-
7552	ACAS2	NM_018677.2	1564	gtctcgaatctctcagaatctctcga	108113	617426	see also 7550 line	-	-
7553	ACAS2	NM_018677.2	1844	gtctcgaatctctcagaatctctcga	108116	617433	see also 7550 line	-	-
7554	ZNF313	NM_018683.3	308	ggcgaatctctcagaatctctcga	108118	617435	see also 7550 line	-	-
7555	ANLN	NM_018685.2	889	ggcgaatctctcagaatctctcga	372534	742521	-	-	-
				ggcgaatctctcagaatctctcga	115227	734481	-	-	-

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7556	ANLN	NM_018695.2	890	agccttgacgcgttttatcc	115228	734482	see also 7555 line
7557	ANLN	NM_018695.2	893	cgctcttcgtctttctccaaa	115229	734493	see also 7555 line
7558	ANLN	NM_018695.2	1330	ctctcttcgtctttctccaaa	115245	734491	see also 7555 line
7559	ANLN	NM_018695.2	3280	agaatccatcagaagagatgaa	115296	734355	see also 7555 line
7560	ANLN	NM_018695.2	3381	tactctccgccacagaagagag	115299	734361	see also 7555 line
7561	CMAS	NM_018696.3	808	casgttgctgagtgaaatcca	208973	598638	-
7562	KAA1199	NM_018696.1	865	tccattctacgctttgacaccc	372564	742430	-
7563	KAA1199	NM_018696.1	2461	ggctctgcacatgacagacac	372613	742433	see also 7562 line
7564	C5orf3	NM_018699.1	1291	aaactctatgatgactctcttg	111290	724190	-
7565	ELAG1	NM_018696.1	133	agagcagctctgctctcttgact	372644	746223	-
7566	ELAG1	NM_018696.1	336	tggagctctggagactctctg	372649	746231	see also 7565 line
7567	ELAG1	NM_018696.1	1088	gtgactctgcagaagattttat	372656	746243	see also 7565 line
7568	LANCE1	NM_018697.2	1229	tggatcttgacgtgtgttggtg	372691	747739	-
7569	PRDM5	NM_018699.1	1048	ggagattattggttcagaatg	36883	689617	transcription regulat
7570	PRDM5	NM_018699.1	1569	tccattatttgccagaaatttg	36901	689628	or DNA binding see also 7569 line
7571	A023	NM_018704.1	274	cacacagatattcttcttgaaa	372689	742004	-
7572	O076	NM_018710.1	321	atgaagctacgcacatcaaaaac	372755	733592	-
7573	O076	NM_018710.1	597	gccacacatccaaaaaatctcc	372766	733599	see also 7572 line
7574	C176	NM_018712.2	855	tgcacatctgggctcacaataa	372801	798939	-
7575	COG1	NM_018714.1	578	agccactctccggcactcctctc	286370	650089	-
7576	A2BP1	NM_018723.2	1810	gcgctgcacggtcacacaccc	49521	472987	-
7577	A2BP1	NM_018723.2	2090	tggagcactctgctgctgtgg	49525	473008	see also 7576 line
7578	A2BP1	NM_018723.2	2104	atgatagtgctctctctctct	49526	472993	see also 7576 line
7579	A2BP1	NM_018723.2	2123	tctcttaatgcagcttgatgat	49530	472995	see also 7576 line
7580	A2BP1	NM_018723.2	2126	tccatctcagctctgataacc	49531	472998	see also 7576 line
7581	A2BP1	NM_018723.2	2151	ggaggtcacaccgctttgtcagg	49532	472997	see also 7576 line
7582	IL17RB	NM_018725.2	269	tgcacagctcgcctctgttgagg	124304	635399	receptor activity
7583	MATR3	NM_018834.3	410	tctctaccactcttaagatgac	52413	474004	transcription regulat
7584	MATR3	NM_018834.3	461	baagcagctctcagctatgtaa	52414	474005	or structural molecule see also 7583 line
7585	MATR3	NM_018834.3	466	cacacctctgctatgaattgat	52416	474007	see also 7583 line
7586	MATR3	NM_018834.3	495	atgattctcttgatctcaaat	52418	474010	see also 7583 line
7587	MATR3	NM_018834.3	534	ctgctctctgagctctctctc	52419	474011	see also 7583 line
7588	MATR3	NM_018834.3	554	tccctctatttgagctctaat	52420	474013	see also 7583 line
7589	MATR3	NM_018834.3	556	ccacaaatctcagctatattt	52422	474014	see also 7583 line
7590	MATR3	NM_018834.3	928	ctgagagcgtctcagaagatct	52430	474028	see also 7583 line
7591	MATR3	NM_018834.3	947	ctctggtatgctgcagagagg	52431	474030	see also 7583 line
7592	MATR3	NM_018834.3	1024	tcttgagagctctctaaact	52432	474033	see also 7583 line
7593	MATR3	NM_018834.3	1025	tgttgagacgtctgataactatc	52433	474034	see also 7583 line

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7594	MATR3	NM.018834.3	1029	gagccgcctacactatctctaa	52434	474035	see also 7583 line
7595	MATR3	NM.018834.3	1031	gactcgtacatactctaat	52435	474036	see also 7583 line
7596	MATR3	NM.018834.3	1034	ctccgcgcatactataatttg	52436	474038	see also 7583 line
7597	MATR3	NM.018834.3	1129	cgctctccctccagcagcaatt	52438	474041	see also 7583 line
7598	MATR3	NM.018834.3	1130	cgctctccctccagcagcaattg	52439	474042	see also 7583 line
7599	INCFP	NM.018843.1	1283	ctgcttgctccatgatactagt	180784	573610	-
7600	BCAP29	NM.018844.1	402	gactctgctgaactctataact	267921	605563	apoptosis
7601	SBE226	NM.018846.2	638	aaagctggaactgatattatt	135566	534174	-
7602	SBE226	NM.018846.2	642	tgcctgaactgatattattgaac	135567	534175	see also 7601 line
7603	MKKS	NM.018846.2	2542	ctgtgagcagccacttgatt	91647	508452	-
7604	CAON1G	NM.018896.3	4752	ccgtgtgcttcggccacagcaca	138816	644860	low voltage-gated calcium channel
7605	CAON1G	NM.018896.3	4755	ctgtgtctgcacagctacact	138817	644861	see also 7604 line
7606	CAON1G	NM.018896.3	5822	agagcttcactctgcacacacg	138823	644872	see also 7604 line
7607	NANS	NM.018946.2	767	aaagtgttgagcctcacataac	205008	620631	-
7608	DAZAP1	NM.018950.2	647	cccgagctgttgatttact	50374	482716	-
7609	DAZAP1	NM.018950.2	692	accagcgtctcaacatccacttt	50375	482717	see also 7608 line
7610	C21orf107	NM.018965.3	724	tatgacagcagcagcaactctta	58358	487038	-
7611	SLC37A1	NM.018964.2	1347	aacgcctccgcataagatctaac	253315	767752	-
7612	SLC37A1	NM.018964.2	1348	gcgcctccgcataagatctaac	253316	767753	sugar porter
7613	SNTG1	NM.018967.1	1743	tacactccagccctatctactg	119066	523972	-
7614	SREB3	NM.018969.3	1173	ctgctctatggcagctttgtgga	241250	729855	gpcr, receptor activity, signal transduction
7615	GP885	NM.018970.3	946	gccatcacacagcgttatcaaaa	240378	625261	rhodopsin-like receptor
7616	GP885	NM.018970.3	949	cccatcacacgcttctatcaaaa	240379	625262	see also 7615 line
7617	GP885	NM.018970.3	952	atcacgcctctatcaaaaagag	240380	625263	see also 7615 line
7618	GP885	NM.018970.3	1179	gttaactcactcagctatatttt	240389	625269	see also 7615 line
7619	GP885	NM.018970.3	1299	gcctaattgctcagcagctttttg	240393	625272	see also 7615 line
7620	GP885	NM.018970.3	1667	aaaggaactcactctgtttatat	240400	625279	see also 7615 line
7621	GDAP1	NM.018972.1	122	aaagcttctctgttgactctgca	373896	700815	-
7622	GDAP1	NM.018972.1	835	gtcaactatatttatctcttgc	373912	700837	see also 7621 line
7623	SLC33A2	NM.018976.3	835	tactctcttatgtatgaatgga	11517	448505	-
7624	NLGN3	NM.018976.3	525	cccgatcgcgcagaaagcttcc	373930	622305	-
7625	NLGN3	NM.018977.1	526	cccgatcgcgcagaaagcttcc	373931	622306	see also 7624 line
7626	NLGN3	NM.018977.1	773	gtccgagccttaccgataatga	373934	622311	see also 7624 line
7627	NLGN3	NM.018977.1	2046	tccatcgtccgtccagcaacag	373945	622322	see also 7624 line
7628	NLGN3	NM.018977.1	2136	tccatcgtccgtccagcaacag	373949	622323	see also 7624 line
7629	NLGN3	NM.018977.1	2724	ttccgcagcttttccactatccc	373955	622334	see also 7624 line
7630	PRKWNK1	NM.018978.1	1656	gcccctccctccctccctccag	97654	814811	kinases related
7631	PRKWNK1	NM.018979.1	3389	gcccctccctccctccctccag	97722	814852	see also 7630 line
7632	PRKWNK1	NM.018979.1	3389	gcccctccctccctccctccag	97723	814853	see also 7630 line
7633	PRKWNK1	NM.018979.1	3480	gcccctccctccctccctccag	97728	814857	see also 7630 line

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7634	PRKWNK1	NM.018979.1	5831	gcgctttcaggtgcacactaac	97788	814936	see also 7630 line	
7635	PRKWNK1	NM.018979.1	6134	actaagtcaaacctctatgaat	97800	814946	see also 7630 line	
7636	ERJ65	NM.018981.1	804	tcctgataaacccaaatgaacc	264679	847852	-	-
7637	ERJ65	NM.018981.1	814	aaccgaataaacccaaatgaacc	264680	847853	see also 7636 line	
7638	ERJ65	NM.018981.1	887	actacgaacaaagtctatcaaac	264682	847856	see also 7636 line	
7639	ERJ65	NM.018981.1	690	tcaggaacaaatctgcacaaatt	264683	847857	see also 7636 line	
7640	ERJ65	NM.018981.1	2280	tcgcacaaatctgcacaaatttt	264745	847897	see also 7636 line	
7641	DJ167A19							
7641		NM.018982.3	1078	gcacagctctttgttcaggtaaccc	374009	757251	-	-
7642	SEMA55	NM.018981.1	837	gggaacctcagcaggaactatgga	251401	637658	-	-
7643	SEMA55	NM.018981.1	845	cagcagcagcactatgagaatgca	251402	637658	see also 7642 line	
7644	RIN2	NM.018993.2	754	ctgcgcagcctctctctatcaaa	295222	735665	-	-
7645	RIN2	NM.018993.2	970	ccgcgaacccgctctatctatctct	295224	735665	see also 7644 line	
7646	RIN2	NM.018993.2	972	ggcaacccgctctatctatctctct	295225	735670	see also 7644 line	
7647	RIN2	NM.018993.2	1029	gcagagatgcgcgaagaacatgca	295226	735671	see also 7644 line	
7648	RIN2	NM.018993.2	1717	atgacccagcttcgaagaacttttt	295232	735677	see also 7644 line	
7649	RIN2	NM.018993.2	1719	ggccacagcttcgaagaacttttt	295232	735678	see also 7644 line	
7650	RIN2	NM.018993.2	2132	tgccactctctacactatctctata	295236	735687	see also 7644 line	
7651	FBXW5	NM.018993.2	1638	ctgggagccgcctctacacactct	374103	705887	-	-
7652	FLJ20152	NM.019000.2	650	cagctctttctctagatgattgc	374111	716564	-	-
7653	FLJ20152	NM.019000.2	677	cgcttctctgccaaagattgattc	374114	716566	see also 7652 line	
7654	FLJ20152	NM.019000.2	881	tgctgcgaagaattatctctgttt	374115	716567	see also 7652 line	
7655	ETAA16	NM.019002.2	614	ttatggaagctctatctctgttt	374290	725942	-	-
7656	FLJ20323	NM.019005.1	432	atgtctgagtttactctacaacc	374382	755811	-	-
7657	FLJ20323	NM.019005.1	453	gcctctgcaagatctacaacca	374384	755813	see also 7656 line	
7658	FLJ20323	NM.019005.1	541	cttgaaatccagctgattgaact	374389	755919	see also 7656 line	
7659	FLJ20323	NM.019005.1	625	cagcaaatatctctctatctatga	374376	755922	see also 7656 line	
7660	FLJ20323	NM.019005.1	1832	agagcactctgaactcgaacttgg	374422	755834	see also 7656 line	
7661	PEP22	NM.019012.2	2409	tcaggttttagactctacacagga	172704	755048	-	-
7662	PEP22	NM.019012.2	2411	caggttttagactctacacagatt	172705	755049	see also 7661 line	
7663	FLJ20793	NM.019022.3	1302	cagtaatgcctgcctgaggaactct	137581	812816	-	-
7664	FLJ10640	NM.019023.1	1215	ctgagctgcctgctgctgcttctctc	214193	804403	-	-
7665	SMOX	NM.019023.2	575	atgctgctggcctgctgcttctctc	225896	612664	-	-
7666	SMOX	NM.019023.2	532	aggaaatcaggaattatataaac	225897	612666	see also 7665 line	
7667	HPI4L	NM.019028.1	688	gggcgcgaacacactgattgtctct	374538	731956	kinase, related	
7668	HPI4L	NM.019028.1	861	ctcttgatctgctctcacaac	374545	731963	see also 7667 line	
7669	PCDH18	NM.019035.2	2896	atgctctcaccgctgccaatattca	149850	551281	-	-
7670	DDX4	NM.019035.1	637	accagctggtgttacaagaagttta	59141	483078	-	-
7671	DDX4	NM.019038.1	638	accagctggtttacaagaagtttaa	59142	483079	see also 7670 line	
7672	DDX4	NM.019038.1	640	ggagctgtttacaagaagtttaaat	59143	483080	see also 7670 line	
7673	ELP4	NM.019040.2	1019	aaccatttctatgaattatctac	374610	714656	-	-

S-adenosylmethionine-dependent methyltransferase

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7674	ELP4	NM.019040.2	1021	ccactgtatcaagatctatcgt	374811	714857	see also 7673 line
7675	ELP4	NM.019040.2	1065	tctctcgtctcaactctgtc	374815	714859	see also 7673 line
7676	APBB1P	NM.019054.2	1343	cttggagatctctctctgtatcc	314871	679185	signal transduction
7677	SEC15L1	NM.019055.2	1002	ccgttgcgtctctcaaatgatc	289943	650055	-
7678	SEC15L1	NM.019055.2	1018	aaagtatttccctcaaatgtcgt	289945	650057	see also 7677 line
7679	SEC15L1	NM.019055.2	1118	aaactgcctctcaaatgatcgt	289948	650060	see also 7677 line
7680	SEC15L1	NM.019055.2	1121	atgcctctcccaagatcaatgc	289949	650061	see also 7677 line
7681	SEC15L1	NM.019055.2	1715	tgagacttctcaatcaactatgc	269969	650078	see also 7677 line
7682	SEC15L1	NM.019055.2	2039	atgcctctcccaatcaactatgc	269972	650087	see also 7677 line
7683	SEC15L1	NM.019055.2	2193	tcttgcctctcttctgtttgc	269977	650093	see also 7677 line
7684	ROBO4	NM.019055.4	1565	tgcctgcctctctctctcatgat	374788	736108	receptor activity
7685	PIP3AP	NM.019061.2	1569	ttttcagatgcctctctataacc	374834	781673	-
7686	PIP3AP	NM.019061.2	1618	ccactctcaaaaagatctaac	374836	781678	see also 7685 line
7687	JNG3	NM.019071.2	231	ccagatgcactgcatacaataa	28855	460590	transcription regulat
7688	JNG3	NM.019071.2	492	caagacgactcttgcataatga	28855	460602	see also 7687 line
7689	JNG3	NM.019071.2	494	caagacgactcttgcataatga	28856	460603	see also 7687 line
7690	JNG3	NM.019071.2	1190	tgcagatttcgacccaatgatcc	28884	460628	see also 7687 line
7691	JNG3	NM.019071.2	1191	tgcagatttcgacccaatgatcc	28885	460629	see also 7687 line
7692	JNG3	NM.019071.2	1251	atgcctctcccaatgcataacc	28889	460632	see also 7687 line
7693	SGTB	NM.019072.1	913	ttgcctgcctgcctgcctgaat	374917	754159	-
7694	SPAT1A8	NM.019073.1	828	ttccacacgcaggttctacatga	374933	752749	-
7695	SPAT1A8	NM.019073.1	539	agtttccacagaggttcattct	374934	725280	see also 7694 line
7696	SPAT1A8	NM.019073.1	1297	agatttccacagaggttcattct	374962	725310	see also 7694 line
7697	SPAT1A8	NM.019073.1	1564	gcacagatgtctcaggaacttata	374966	725317	see also 7694 line
7698	FLJ20051	NM.019087.1	118	ggcgtttctctcaggtttatc	375116	776172	-
7699	FLJ20051	NM.019087.1	275	atcttcacacacaggtttatc	375120	776176	see also 7698 line
7700	FLJ20051	NM.019087.1	538	agctcgtctcaggttcagatcata	375130	776187	see also 7698 line
7701	FLJ20051	NM.019087.1	541	gcagagtcaggttcagatcata	375131	776188	see also 7698 line
7702	PD2	NM.019088.1	320	gcagagtcaggttcagatcata	375134	708190	-
7703	C20orf155	NM.019095.3	713	tgcagagtcaggttcagatcata	218398	671407	-
7704	CNGB3	NM.019098.2	1243	tttgcagagtcaggttcagatcata	247944	520783	-
7705	CNGB3	NM.019098.2	1244	tgcagagtcaggttcagatcata	247945	520794	see also 7704 line
7706	CNGB3	NM.019098.2	1245	ggcagagtcaggttcagatcata	247946	520795	see also 7704 line
7707	APOM	NM.019101.2	497	ccagagtcaggttcagatcata	271910	654558	liquid transporter
7708	H0X45	NM.019102.2	108	gcgcagagtcaggttcagatcata	5068	444714	transcription regulat
7709	H0X45	NM.019102.2	109	gcgcagagtcaggttcagatcata	5069	444715	transcription factor
7710	TNXB	NM.019105.4	13010	ccgctgcctctcaggttcagatcata	42442	570944	-
7711	KLHL4	NM.019117.3	1051	tcctccttcctcaggttcagatcata	117847	552599	-
7712	KLHL4	NM.019117.3	1095	gcacataagtcctcaggttcagatcata	117848	552603	see also 7711 line
7713	LOC56181	NM.019557.3	756	agcagcttcctcaggttcagatcata	376314	740453	-
7714	LOC56181	NM.019557.3	1018	ccagcagcttcctcaggttcagatcata	375320	740457	see also 7713 line

7715	DKFZP761	U0424	NM.019590.1	574	tccagcaatggaggcttctatgc	375329	800485	-	-	-
7716	U0424	NM.019590.1	989	agattatccacgcttttgaacc	375347	800502	see also 7715 line	-	-	-
7717	RNF20	NM.019592.5	408	atctctctaaagctttgactct	375382	807739	-	-	-	-
7718	RNF20	NM.019592.5	910	cagcctgggtatgtgtccaaat	375390	807736	see also 7717 line	-	-	-
7719	RNF20	NM.019592.5	2402	atcgcctccaaatgtctctaa	375422	807761	see also 7717 line	-	-	-
7720	RNF20	NM.019592.5	2889	ggctcttaacatgcgtcaaaag	375426	807768	see also 7717 line	-	-	-
7721	KAA1.134	NM.019593.2	2193	gggtgtccacgcgcatgtgttaa	198901	590820	-	-	-	-
7722	KAA1.134	NM.019593.2	2194	tgctatccacagctgtgtatcac	198902	590821	see also 7721 line	-	-	-
7723	LOC56270	NM.019613.2	812	tctatcagggctgttaatccagg	375526	718920	-	-	-	-
7724	PARD3	NM.019619.2	113	tcgcagagatccaaactactgg	308266	538486	cell cycle,	-	-	-
7725	PARD3	NM.019619.2	2514	tgcccttaanttgattgttcttta	308326	538537	kinase related	-	-	-
7726	PARD3	NM.019619.2	2515	cgcagccaatgattgttcttta	308327	538538	see also 7724 line	-	-	-
7727	PARD3	NM.019619.2	2517	cagtcacttgattgttcttta	308328	538539	see also 7724 line	-	-	-
7728	PARD3	NM.019619.2	2530	tcttttaaacacraaaactaa	308330	538540	see also 7724 line	-	-	-
7729	PARD3	NM.019619.2	2571	agcttaacagacctaactcaata	308334	538542	see also 7724 line	-	-	-
7730	PARD3	NM.019619.2	2573	ctacagacacctaactcaata	308335	538543	see also 7724 line	-	-	-
7731	PARD3	NM.019619.2	2575	gacagacacctaactcaata	308336	538544	see also 7724 line	-	-	-
7732	ABC89	NM.019624.1	1240	caactgcgtctgtctctactgt	69952	492021	-	-	-	-
7733	EIF4ENIF	NM.019643.2	1003	agcttgctctgtgtgtatgaag	269024	476720	-	-	-	-
7734	EIF4ENIF	NM.019643.2	1004	tcttgctctgtgtgtatgaaga	269025	476721	see also 7733 line	-	-	-
7735	EIF4ENIF	NM.019643.2	1007	tgtgtctctgtgtgtatgaagct	269026	476722	see also 7733 line	-	-	-
7736	EIF4ENIF	NM.019643.2	1009	ggctctgtgtgtatgaagctgtt	269027	476723	see also 7733 line	-	-	-
7737	EIF4ENIF	NM.019643.2	1177	tggcagaactctgggtgaactct	269028	476726	see also 7733 line	-	-	-
7738	MEITL3	NM.019652.2	1134	agccagaagcttctctctccca	52520	474143	-	-	-	-
7739	MEITL3	NM.019652.2	1603	agctgtgtccaccgctctcaaa	52524	474156	see also 7738 line	-	-	-
7740	C1P52	NM.019657.3	615	tgcagagtggtgtatgaatca	232111	617034	-	-	-	-
7741	C1P52	NM.019657.3	1191	tgtcaagctctgtcttcaaacgc	232130	617049	see also 7740 line	-	-	-
7742	GRC4	NM.019858.1	1354	cagcgcctgtctctctctatg	240437	625334	gpcr,	-	-	-
7743	GRC4	NM.019858.1	1355	agcgcctctctctctctatga	240438	625335	receptor activity,	-	-	-
7744	CHS17	NM.019866.2	543	agccacgcagagctttctactg	217395	605599	signal transduction	-	-	-
7745	CHS17	NM.019866.2	548	accgcagctttctactactgt	217396	605600	see also 7742 line	-	-	-
7746	CHS17	NM.019866.2	547	cccgagctttctactactatg	217397	605601	see also 7744 line	-	-	-
7747	ERO1LB	NM.019891.2	402	agagactttctactactcaag	226687	722219	-	-	-	-
7748	ERO1LB	NM.019891.2	824	ttaacagctctactactatcgc	226706	722228	see also 7747 line	-	-	-
7749	ERO1LB	NM.019891.2	827	agagcctactactactactctgc	226707	722230	see also 7747 line	-	-	-
7750	ERO1LB	NM.019891.2	835	atcgttatgtctcttttaactgc	226708	722231	see also 7747 line	-	-	-
7751	ASAH2	NM.019893.1	45	ctcgggagacacttgaagaccaca	303536	598829	signal transduction	-	-	-
7752	C3orf4	NM.019895.1	1590	ctctccacacaggaagagcac	326213	691313	-	-	-	-
7753	C6orf4	NM.019895.1	1599	accggaagcttctactactatg	326214	691314	see also 7752 line	-	-	-

Alzheimer disease(アルツハイマー病)

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[illegible]

7793	MRPS22	NM_020191.2	368	agcactcaatgctgcttaaa	282201	659749	see also 7791 line	-	-
7794	C11orf30	NM_020193.2	214	aacatgacaggttaacacat	375949	772286	-	-	-
7795	C11orf30	NM_020193.2	819	aacacacagagcatatgac	375953	772294	see also 7794 line	-	-
7796	C11orf30	NM_020193.2	1427	ctctccacacagcatatgac	375960	772305	see also 7794 line	-	-
7797	C11orf30	NM_020193.2	1456	atgctgctgacgctgctgctg	375963	772307	see also 7794 line	-	-
7798	C11orf30	NM_020193.2	1472	atgctgctgacgctgctgctg	375964	772309	see also 7794 line	-	-
7799	C11orf30	NM_020193.2	1689	atctacatcaatccatgacttc	375969	772325	see also 7794 line	-	-
7800	GLD04	NM_020194.4	349	cagaatcatgctgcttctgac	376039	738005	-	-	-
7801	GLD04	NM_020194.4	941	tggcatctttctgcttctgact	376055	738019	see also 7800 line	-	-
7802	RNPEP	NM_020216.3	906	tccctctctctctgactgttg	155927	559531	-	zinc binding	-
7803	RNPEP	NM_020216.3	900	atgcacacgctctctctctgg	155931	559538	see also 7802 line	-	-
7804	RNPEP	NM_020216.3	1446	atctatccagcttttgctgtga	155945	559549	see also 7802 line	-	-
7805	RNPEP	NM_020216.3	1517	cccttgggacttctctctgaag	155946	559550	see also 7802 line	-	-
7806	PRDM8	NM_020226.1	1713	gcacacagcttctctctgtggt	376266	741090	-	-	-
7807	PRDM8	NM_020226.1	1715	gcacacagcttctctctgtgct	376267	741091	see also 7806 line	-	-
7808	MD5010	NM_020231.3	210	aacatcgttcaatcaaacctc	376310	772580	-	-	-
7809	MD5010	NM_020231.3	509	gtctctctctcaatgaacatc	376321	772590	see also 7808 line	-	-
7810	BBX	NM_020235.2	639	accagagctctctcaaacatc	22512	456064	-	-	-
7811	BBX	NM_020235.2	1553	tctctctcaatgcaagatbaa	22525	456073	see also 7810 line	-	-
7812	BBX	NM_020235.2	1556	tctctctcaatgcaagatbaa	22526	456081	see also 7810 line	-	-
7813	BBX	NM_020235.2	2255	agaaactctctctctctgaag	22544	456095	see also 7810 line	-	-
7814	BBX	NM_020235.2	2774	tctctctgaggaacacacacac	22555	456110	see also 7810 line	-	-
7815	BBX	NM_020235.2	3017	gcacagctctctctctctcttc	22557	456112	see also 7810 line	-	-
7816	BBX	NM_020235.2	3019	gcacagctctctctctctcttc	22558	456114	see also 7810 line	-	-
7817	KNSL7	NM_020242.1	3504	agctgagagagcctctgaagc	209533	671434	-	-	-
7818	CHP11	NM_020244.1	800	aacatgaggaatcacatgac	30102	506340	-	-	-
7819	CHP11	NM_020244.1	1073	tggatgcttctctgaagctc	209543	671451	see also 7818 line	-	-
7820	TULP4	NM_020245.2	2317	gatttgcctgctgaagttctaca	13787	682180	transcription factor	-	-
7821	TULP4	NM_020245.2	3211	aacacacactgctgctgaatct	13799	682204	see also 7820 line	-	-
7822	TULP4	NM_020245.2	3215	acctctgctgctgaatctctaaa	13800	682205	see also 7820 line	-	-
7823	TULP4	NM_020245.2	3216	acctctgctgctgaatctctaaa	13801	682206	see also 7820 line	-	-
7824	TULP4	NM_020245.2	5879	atcaatttggcagctgttgatg	13818	682236	see also 7820 line	-	-
7825	CNNL1	NM_020307.1	512	tcacacacactcgcctgctgaag	23760	674728	-	-	-
7826	CNNL1	NM_020307.1	514	tcacacacactcgcctgctgaag	23761	674729	see also 7825 line	-	-
7827	CNNL1	NM_020307.1	630	ggattttgctgctgctgaagc	23766	674735	see also 7825 line	-	-
7828	CNNL1	NM_020307.1	1174	agcctctcaatgctgctgaagaa	23777	674748	see also 7825 line	-	-
7829	CNNL1	NM_020307.1	1359	aacctctcaatgctgctgaagaa	23779	674753	see also 7825 line	-	-
7830	CNNL1	NM_020307.1	1553	aagatctctctctctgaggg	23780	674757	see also 7825 line	-	-
7831	OMKOR1	NM_020311.1	1145	tccaagctactgctgccaacagg	239124	824012	gprot. activity, receptor, activity, signal transduction	-	-
7832	DRP2P564 O043	NM_020319.1	808	tctctgagagagactgagttatt	378516	759551	-	-	-

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7833	OKZF564	7833	OK43	NM_020319.1	617	gagcagtgattatacctaagc	378517	759555	see also 7832 line	
7834	RAI17	7834	RAI17	NM_020338.1	1040	agcctatcacacacactatcg	159508	809155	-	
7835	PAK7	7835	PAK7	NM_020338.1	1041	ggcgataacagcaactataga	159507	809156	see also 7834 line	
7836	PAK7	7836	PAK7	NM_020341.2	2151	gagcagatgcgcgcgaataat	95505	511171	kinase related	
7837	PAK7	7837	PAK7	NM_020341.2	2154	acgctatgcgcgcgaataatgt	95566	511172	see also 7836 line	
7838	PAK7	7838	PAK7	NM_020341.2	2379	agcagatgcgcgcgaactttac	95576	511177	see also 7836 line	
7839	PAK7	7839	PAK7	NM_020341.2	2380	cgcagatgcgcgcgaactttac	95577	511178	see also 7836 line	
7840	PAK7	7840	PAK7	NM_020341.2	2405	aagatgaagacgcgcgaactaac	95578	511180	see also 7836 line	
7841	PAK7	7841	PAK7	NM_020341.2	2414	agacacacacacgaactttcca	95579	511181	see also 7836 line	
7842	SLC24A2	7842	SLC24A2	NM_020344.1	1144	tggatctatataagaaacataaa	257800	693107	symporter	
7843	PLSCR4	7843	PLSCR4	NM_020353.1	307	agccttgccatctggatcacaca	151342	803285	phospholipid scramblase	
7844	LALP1	7844	LALP1	NM_020354.1	920	ggagagcgcctctcccaattg	378839	585973	-	
7845	LALP1	7845	LALP1	NM_020354.1	1051	acgttatgaagttttttttatcca	378841	585974	see also 7844 line	
7846	LALP1	7846	LALP1	NM_020354.1	1463	tgccagatgcgcgcgaactttac	378852	585982	see also 7844 line	
7847	HT014	7847	HT014	NM_020362.2	307	cgcagcagccgcgcgaactttgt	378833	716210	-	
7848	HT014	7848	HT014	NM_020362.2	310	acgcagccgcgcgaactttgtga	378834	716212	see also 7847 line	
7849	PGP4P1	7849	PGP4P1	NM_020366.2	791	caatcatctgaatcttcacataaa	376913	540009	-	
7850	C12orf6	7850	C12orf6	NM_020367.2	319	taacatctgaatcttcacataaa	376932	805719	-	
7851	C12orf6	7851	C12orf6	NM_020367.2	382	ttccaatctgaatcttcacataaa	376934	805721	see also 7850 line	
7852	FSCN3	7852	FSCN3	NM_020369.1	1044	agcagcagccgcgcgaactttac	377009	805744	see also 7850 line	
7853	C12orf4	7853	C12orf4	NM_020374.2	1077	tgatctatgcgcgcgaactttac	377121	751857	actin cross-linking	
7854	C12orf4	7854	C12orf4	NM_020374.2	1080	tgtatgaatgcgcgaactttacca	377122	751858	see also 7854 line	
7855	CYS1L2	7855	CYS1L2	NM_020377.2	275	ttcccttcaggcttgactattat	238937	623062	receptor activity, signal transduction	leukotriene receptor
7857	CYS1L2	7857	CYS1L2	NM_020377.2	277	tccttcctgcgcgcgaactttact	238938	623064	see also 7856 line	
7858	CYS1L2	7858	CYS1L2	NM_020377.2	469	tgatcttcctgcgcgaactttac	238947	623070	see also 7856 line	
7859	XPINPE1	7859	XPINPE1	NM_020383.2	831	gagcagcagctgcgcgaactttga	186679	580496	-	
7860	XPINPE1	7860	XPINPE1	NM_020383.2	833	gagcagcagctgcgcgaactttga	186680	580497	see also 7859 line	
7861	TRPC7	7861	TRPC7	NM_020389.1	994	ttgtcttcacagcttgatgaaaa	252170	645608	receptor activity, channel	
7862	EIF-5A2	7862	EIF-5A2	NM_020390.5	132	tgccagcagcagcattttttact	56830	476778	-	
7863	EIF-5A2	7863	EIF-5A2	NM_020390.5	362	aacatgatgtttccaactttacca	56840	476785	see also 7862 line	
7864	GOPC	7864	GOPC	NM_020389.1	1287	ctgtgtcgtatgttccaagacaca	318123	535701	-	
7865	PLXDC1	7865	PLXDC1	NM_020405.3	525	tgccgcgaatcaccatgcgaact	250548	636819	receptor activity	
7866	CGI-152	7866	CGI-152	NM_020410.1	1450	ctaaccaaaatcgaaagatttt	76819	498119	plasma membrane cation-transporting ATPase	
7867	DDX24	7867	DDX24	NM_020414.3	1649	ctctctgcacaccttcctatagaag	50732	473533	ATP dependent RNA helicase	

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7868	PPP2R2C	NN_020416.2	66	ccaggtaacccgggaattatacc	238721	686280	phosphatase,	-	-
7869	PPP2R2C	NN_020416.2	902	ccgctgcgcagcgaagctcagc	238737	686284	signal transduction	-	-
7870	PAGE-1	NN_020423.4	1400	gggagagacgacgacgaagctc	95427	488149	kinase related	-	-
7871	SMURF1	NN_020429.1	2103	agagttttatagagatcgaagc	230798	615148	signal transduction	-	-
7872	PHF2	NN_020432.2	522	tgcgcgaatgattattctctgc	265997	782140	-	-	-
7873	PHF2	NN_020432.2	1220	tgcgctcgcgtcttcaagctc	265711	782153	see also 7872 line	-	-
7874	PHF2	NN_020432.2	1435	tgcgtcccccacgagttatgaaa	265713	782160	see also 7872 line	-	-
7875	SALL4	NN_020436.2	559	ccccccaggaatdiagcttttag	38882	649639	transcription_regulat	-	-
7876	DOLP1	NN_020438.2	377	ggactccaccacgctcgatctc	377463	710341	or	-	-
7877	NAV1	NN_020443.2	638	cagcgcgcgcgcgaagaaagctgc	94162	520514	-	-	-
7878	NAV1	NN_020443.2	4864	ctcgaagctctgaataacatctca	94206	520559	see also 7877 line	-	-
7879	KIAA1387	NN_020463.1	794	acctatcgcctgggaagacgctgc	377690	750287	-	-	-
7880	KIAA1387	NN_020463.1	1466	cagcatcgcctcgcacgatataat	377702	750302	see also 7879 line	-	-
7881	KIAA1387	NN_020463.1	1842	tggacattcttgctactcaatt	377707	750306	see also 7879 line	-	-
7882	KIAA1387	NN_020463.1	1843	ggacacttctctctctactatg	377708	750307	see also 7879 line	-	-
7883	KIAA1387	NN_020463.1	2153	acctctcatatgctcgtgtaaca	377720	750333	see also 7879 line	-	-
7884	GALNT1	NN_020474.2	1189	agcgtctacaagctgactatg	161844	561416	transferrase, transferring	-	-
7885	GALNT1	NN_020474.2	1199	aagcagatcttctgagatctatctc	161845	561417	glycosyl groups	-	-
7886	PBXP1	NN_020524.2	631	tgggacatctctcactcactctgc	113167	694768	transcription_regulat or	-	-
7887	EPHA8	NN_020526.2	831	gggagacacccacgaagtctactgc	81647	501985	receptor, activity,	-	-
7888	EPHA8	NN_020526.2	2229	gcgcgcctcgaagctgttgact	81653	501995	kinase, related,	-	-
7889	PGBP3	NN_020528.1	791	aggtgttcagcgtctacacatcc	34579	453428	signal transduction	-	-
7890	PGBP3	NN_020528.1	911	cgcctttcccccggagaaagctgc	34581	453429	see also 7889 line	-	-
7891	RTN4	NN_020532.3	1824	cagattgtctctacacacgaat	135437	540131	RNA binding	-	-
7892	CSR2BP	NN_020536.2	2404	ctctgctgcttgaacaccttata	215054	602382	apoptosis	-	-
7893	CSR2BP	NN_020536.2	2406	cctgcattcttgaaccttatctc	215055	602383	see also 7892 line	-	-
7894	CSR2BP	NN_020536.2	2419	acctatatacgaagctgattatg	215057	602384	see also 7892 line	-	-
7895	ADCY2	NN_020546.1	1117	tcctcaacctctcgaacacct	164830	618410	guanylate cyclase	-	-
7896	ADCY2	NN_020546.1	1327	tcctctgacagctctcaactctt	164833	618418	see also 7895 line	-	-
7897	ADCY2	NN_020546.1	1669	tccaataagcgaacctctgaagacc	164840	618433	see also 7895 line	-	-
7898	ADCY2	NN_020546.1	3165	acctgaagctctgagcaatacca	164871	618460	see also 7895 line	-	-
7899	ADCY2	NN_020546.1	3273	gaactcaagaactcttcttgaaa	164876	618470	see also 7895 line	-	-
7900	AMHR2	NN_020547.1	170	gaactcgggagacacagaagacc	72052	493001	transforming growth factor-beta	-	-
7901	C11orf15	NN_020644.1	384	ctctcgcgcgtcgaagctaat	320080	691424	receptor	-	-
7902	C11orf15	NN_020644.1	386	gtctacgcgtgagagcaaat	320081	691425	kinase related	-	-
							persistent Mullerian duct syndrome(特发性ミユ フー管症候群)	-	-

7903	C11orf15	NM_020644.1	424	gtccatcaatcaggttccattat	326082	691426	see also 7901 line
7904	C11orf15	NM_020644.1	426	caaatcaatggttccattat	326083	691427	see also 7901 line
7905	JPH1	NM_020647.1	1044	tctatgctcaggtcagaag	326093	659963	-
7906	JPH1	NM_020647.1	1871	sagctgacgtctgatacaca	326093	659963	-
7907	PEL1	NM_020651.2	4039	agtttctccatgacagaa	37853	741295	see also 7905 line
7908	PEL1	NM_020651.2	4253	sagccagatcagatcatat	377856	713331	see also 7907 line
7909	PEL1	NM_020651.2	4258	cajcatagatcatatcttt	377858	713333	see also 7907 line
7910	PEL1	NM_020651.2	4576	atgctgaatgctccatttgg	377867	713347	see also 7907 line
7911	PEL1	NM_020651.2	5027	ctcttgaatgctccatttgg	377878	713380	see also 7907 line
7912	CLK4	NM_020666.1	886	tgtctatcatggttgatgtt	77195	498456	kinase related
7913	CLK4	NM_020666.1	886	aaactgctatggttgatgtt	77199	498461	see also 7912 line
7914	RAB22A	NM_020673.2	693	tgtatgagccagccgcaaaaac	110039	715420	signal transduction
7915	ABHD6	NM_020676.3	124	atgttggttaactgtttgatt	204091	594511	-
7916	DSCAML1	NM_020693.2	445	ccctctgcgtctcaatagctt	186074	737850	-
7917	DSCAML1	NM_020693.2	446	ccctctgcgtctcaatagctt	186075	737851	see also 7916 line
7918	DSCAML1	NM_020693.2	447	ccctctgcgtctcaatagctt	186076	737852	see also 7916 line
7919	DSCAML1	NM_020693.2	449	ctctgcgtctcaatagcttacc	186077	737853	see also 7916 line
7920	DSCAML1	NM_020693.2	452	cgctctcaatagcttaccatg	186078	737854	see also 7916 line
7921	DSCAML1	NM_020693.2	565	ccctctgcgtctcaatagctt	186082	737858	see also 7916 line
7922	KIAA1145	NM_020698.1	841	cagcgtctcatctgtgcaaac	326847	771102	-
7923	KIAA1145	NM_020698.1	842	agcgtctcatctgtgcaaac	326848	771103	see also 7922 line
7924	P86beta	NM_020699.1	1279	ccagctgcgcacagatttacc	8842	442442	transcription_regulat
7925	P86beta	NM_020699.1	1515	agagcatctatgagatctaac	8847	442445	see also 7924 line
7926	P86beta	NM_020699.1	1664	aggtctcaactgcttacttga	8851	442451	see also 7924 line
7927	SLC12A5	NM_020708.3	1026	cgctgcgcagctgcttactga	256792	640469	-
7928	SLC12A5	NM_020708.3	1028	gctctgcagctgcttactga	256793	640470	see also 7927 line
7929	SLC12A5	NM_020708.3	1327	gctctgcagctgcttactga	256795	640474	see also 7927 line
7930	KIAA1287	NM_020748.1	383	cagcagctgctgcatatcttgc	378367	729394	-
7931	KIAA1287	NM_020748.1	912	tgtctgttcagctgcatatctg	378383	729403	see also 7930 line
7932	KIAA1287	NM_020748.1	1544	aaacagcttactgctatcttga	378389	729410	see also 7930 line
7933	KIAA1287	NM_020748.1	1548	aaacagcttactgctatcttga	378400	729411	see also 7930 line
7934	KIAA1287	NM_020748.1	2561	tgtctgaatgagcttacttga	378435	729437	see also 7930 line
7935	KIAA1287	NM_020748.1	3089	taactgtgcagcttccacttgc	378450	729455	see also 7930 line
7936	KIAA1287	NM_020748.1	3094	tgcagctccactatcttgaagc	378451	729456	see also 7930 line
7937	KIAA1287	NM_020748.1	3120	tgcagctccactatcttgaagc	378453	729457	see also 7930 line
7938	KIAA1287	NM_020748.1	3425	tgtatgaagatgattgtctt	378464	729472	see also 7930 line
7939	XP05	NM_020750.1	154	ctgtagccctccactatcttga	378469	733124	-
7940	XP05	NM_020750.1	3560	tccgaagagagctccacttga	378537	733209	see also 7939 line
7941	COG6	NM_020751.1	432	caactctcaagcttactatgaa	268698	650604	-
7942	COG6	NM_020751.1	1112	cagcgtctcaagcttactatgaa	268718	650624	see also 7941 line
7943	COG6	NM_020751.1	1113	agcgtctcaagcttactatgaa	268719	650625	see also 7941 line
7944	COG6	NM_020751.1	1663	tgtctgaagcttactatgaa	268742	650649	see also 7941 line
7945	TDE2	NM_020755.2	378	tctcttcttactatgactgaa	327610	693546	-

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7946	repor	NM_020761.1	1250	gtccactggattgttagasaa	378565	738675	-	-	-
7947	HACE1	NM_020771.2	1652	atgactccnccctgtttcttga	228965	615327	-	-	-
7948	HACE1	NM_020771.2	1780	asgtatccatgcattcatcaag	228972	615533	see also 7947 line	-	-
7949	HACE1	NM_020771.2	1905	tgtctgtttacagactctattatt	228977	615538	see also 7947 line	-	-
7950	KAA1322	NM_020773.1	1503	aaacccagctctggactgtattaaa	378760	749084	-	-	-
7951	KAA1322	NM_020773.1	1732	acctctctaaatgactgtttttta	378766	749091	see also 7950 line	-	-
7952	MB	NM_020774.1	261	ctgcgcgcagcaaccactcattg	378776	754311	-	-	-
7953	MB	NM_020774.1	262	tgcgcgcgcagcaaccactcattg	378777	754312	see also 7952 line	-	-
7954	MB	NM_020774.1	823	atgttttgaccttcaactcaaac	378793	754329	see also 7952 line	-	-
7955	MB	NM_020774.1	1084	atgttctccactcttagtgaagt	378800	754335	see also 7952 line	-	-
7956	MB	NM_020774.1	1106	tgccttgatccacacagatttat	378801	754336	see also 7952 line	-	-
7957	MB	NM_020774.1	1107	tgccttgatccacacagatttat	378802	754337	see also 7952 line	-	-
7958	MB	NM_020774.1	1109	gcgcctatccacacagatttttaa	378803	754339	see also 7952 line	-	-
7959	MB	NM_020774.1	1356	aaacacagatctgtagttaaag	378811	754344	see also 7952 line	-	-
7960	MB	NM_020774.1	1824	tcccaatccaatgcactgatttacc	378827	754354	see also 7952 line	-	-
7961	MB	NM_020774.1	2403	aggtcttgatgcactctcaaga	378843	754372	see also 7952 line	-	-
7962	MIDOR1	NM_020778.1	1310	acactgtgtcccaacttaaacg	91455	495543	kinase related	-	-
7963	MIDOR1	NM_020778.1	5292	atctccatgctctcccaacttaaac	91481	495572	see also 7962 line	-	-
7964	KAA1336	NM_020779.2	1380	atgcaacacacccactctgataagc	378964	774067	-	-	-
7965	KAA1336	NM_020779.2	1473	cagatcacacagctctgtagaaga	378966	774069	see also 7964 line	-	-
7966	ZNF398	NM_020781.2	1299	gaggagcaagtgctttcttctca	45474	487630	transcription regulat	-	-
7967	SYT4	NM_020783.2	237	aaactctctccatcagaattttt	279126	89906	-	transporter	-
7968	IGSF9	NM_020785.2	2938	ccctctctcgaagctgaattgt	379037	745429	-	-	-
7969	IGSF9	NM_020785.2	3519	tgcctcttcggcgggaattctcgt	379044	745431	see also 7968 line	-	-
7970	KAA1363	NM_020782.1	1258	tggatctccgctctaggaatagtt	205261	595226	-	-	-
7971	KAA1363	NM_020782.1	1264	tccggactagaattatttactct	205262	595227	see also 7970 line	-	-
7972	SEMA6	NM_020796.1	744	tctcgatgcactatcaaaaac	135728	540218	receptor activity, apoptosis, signal transduction	-	non-small-cell lung cancer (非小細胞肺癌)
7973	SEMA6	NM_020796.1	2549	aggagattgttcggaaagttaac	135779	540261	see also 7972 line	-	-
7974	SEMA6	NM_020796.1	2650	aggaactcttcggaaagttaac	135780	540262	see also 7972 line	-	-
7975	KIAA1376	NM_020801.1	483	cacaaaaagatgatgatatttc	314094	804868	-	-	-
7976	KIAA1376	NM_020801.1	532	cacaaaaagatgatgatatttc	314097	804869	see also 7975 line	-	-
7977	KIAA1376	NM_020801.1	620	tggatgaatcctatctatcttca	314099	804570	see also 7975 line	-	-
7978	GPIN	NM_020806.3	1460	aaactctgaagcccaactatca	236543	671597	enzyme	-	-
7979	GPIN	NM_020806.3	1630	ggaaagatgcctgaactctcga	236550	671597	see also 7978 line	-	-
7980	GPIN	NM_020806.3	2063	atctctcttccacactctcaaac	236565	671612	see also 7978 line	-	-
7981	GPIN	NM_020806.3	2064	tccggaacacacactctcaaac	236566	671613	see also 7978 line	-	-
7982	POPH10	NM_020815.1	2221	cccgatctctgacagctctcttgc	149438	550689	-	-	-
7983	POPH10	NM_020815.1	3313	gcgaagagccgcagctctcttgc	149450	551007	see also 7982 line	-	-
7984	STT13	NM_020826.1	1114	ctggaacgagatgactgattgtt	275017	657663	-	-	-
7985	KAA1441	NM_020832.1	1736	aaactctgacagctctatgaaac	265178	647973	-	-	-
7986	KAA1449	NM_020839.2	748	aaactatcagctctgctgtagag	379417	722863	-	-	-

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7987	KIAA1149	NM_020839.2	1685	ctgcccaattcaacaasattcc	379452	722900	see also 7986 line	
7988	OSBP1.8	NM_020841.3	520	tcctctttctgtatcaaaaga	303670	789351	-	-
7989	NZF291	NM_020843.1	47	ttccagctcccaatgactcaga	379459	789702	-	-
7990	ZNF291	NM_020843.1	3350	ctgttgaacattgctcttctga	379565	789766	see also 7989 line	
7991	ZNF291	NM_020843.1	3846	tcctctttctgtctctctcaact	379580	789774	see also 7989 line	
7992	PITPNM2	NM_020845.1	1765	aaagagctccctctctcttctgctg	150832	564708	-	-
7993	KIAA1163	NM_020849.1	812	ccagagagctccctctctctctct	23813	621459	-	-
7994	KIAA1163	NM_020849.1	2021	ctctctctccctctctctctctct	238363	621478	see also 7993 line	
7995	KIAA1168	NM_020854.2	1126	ccctctctctctctctctctctct	379857	782503	see also 7995 line	
7996	KIAA1168	NM_020854.2	1128	ctctctctctctctctctctctct	379857	782503	see also 7995 line	
7997	KIAA1168	NM_020854.2	2957	ttccgagatgagttgtatctaac	379707	782941	transcription_regulat	-
7998	KIAA1174	NM_020856.1	1708	tggcccctctgatactcttttc	5825	441559	or	-
7999	KIAA1174	NM_020856.1	1998	tggaatgcctctctgatatata	5833	441564	see also 7998 line	
8000	SEMA6D	NM_020858.1	554	aggaacattctcgttttttgagg	320815	775529	receptor activity	-
8001	SEMA6D	NM_020858.1	617	caagttagttgaataatctgaga	320817	775531	see also 8000 line	
8002	SEMA6D	NM_020858.1	1058	ctgcctctctgcccataataat	320837	775542	see also 8000 line	
8003	SEMA6D	NM_020858.1	1114	tgcctatagataatggaaactatg	320839	775546	see also 8000 line	
8004	SEMA6D	NM_020858.1	1115	gcctatagatattgaaactatgt	320840	775547	see also 8000 line	
8005	DHX36	NM_020865.1	1698	ctgtctctctggaataatgtaatt	59907	483726	-	-
8006	DHX36	NM_020865.1	1699	tgtgtctggaataatgtaattg	59908	483727	see also 8005 line	
8007	DHX36	NM_020865.1	1704	tctggaataatgtaattctctaco	59915	483728	see also 8005 line	
8008	DHX36	NM_020865.1	1838	gaattgattatgaataactatgc	59915	483731	see also 8005 line	
8009	KLHL1	NM_020868.1	1763	tgcctatattgctcaactatgc	117703	523261	actin binding	-
8010	DPD10	NM_020868.1	2416	tgcctatattgctcaactatct	186974	590813	-	-
8011	LRRN1	NM_020873.3	1706	aggtctccctctctggaataag	379821	697519	-	-
8012	PHF12	NM_020898.1	1468	atgaattgtctcgaatcaatctg	34707	483497	transcription_regulat	-
8013	PHF12	NM_020898.1	1477	tccgaatcctctgaatcaatctg	34708	483498	or	-
8014	PHF12	NM_020898.1	1842	tgcctctctctgaatcaatctg	34717	483506	see also 8012 line	
8015	PHF12	NM_020898.1	1843	tgcctctctctgaatcaatctg	34718	483507	see also 8012 line	
8016	KIAA1524	NM_020890.1	375	tgcctctctctgaatcaatctg	379993	776544	-	-
8017	KIAA1524	NM_020890.1	1547	tccgtatgaatgaatgaatctct	380038	776569	see also 8016 line	
8018	KIAA1524	NM_020890.1	1555	tgcgaatgaatgaatgaatctct	380039	776571	see also 8016 line	
8019	OSBP1.5	NM_020898.2	999	ctgpaasaagctgaatctctcaga	179588	572865	-	-
8020	HGN3	NM_020897.1	681	tcccgctctctctgctctctcaga	179583	571973	-	-
8021	KIAA1560	NM_020918.2	452	tgcgtttctggaattgtatttta	215822	603602	-	-
8022	KIAA1560	NM_020918.2	454	gggtttctggaattgtatttta	215823	603603	see also 8021 line	
8023	ALS2	NM_020919.2	1668	aagtttcccccagagctcttaaga	294669	735547	primary lateral sclerosis (原発性側索硬化症)	
8024	ALS2	NM_020919.2	2185	ctctctgtatgaatgctctgataaa	294683	735560	spastic paralysis (痲痺性麻痺)	
8025	ALS2	NM_020919.2	2608	tgcctgaattgtctctcttaata	294702	735574	sclerosis (硬化性筋萎縮性側索硬化症)	
8026	ALS2	NM_020919.2	2714	tgcctgaatcagagctctcttaaa	294705	735577	see also 8023 line	

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8027	AL52	NM_020919.2	3854	Hgcaactgagctgaaggaag	294728	735594	see also 8023 line	
8028	AL52	NM_020919.2	3859	Cagtgagctgaagctgaagc	294729	735593	see also 8023 line	
8029	AL52	NM_020919.2	4801	Gcaactctgagagatataaa	294768	735622	see also 8023 line	
8030	AL52	NM_020919.2	4819	Tgagcagatgagcagcaacttt	294772	735623	see also 8023 line	
8031	ZNF481	NM_020924.2	4715	ggccacgcactctgataaatt	45866	815735	transcription_regulat	protein binding
8032	ZNF481	NM_020924.2	930	gaatactgagccacactttaaa	45873	815741	see also 8031 line	
8033	KUAI1573	NM_020925.1	1873	Tggttggcaaaatactcaagc	265214	811570	-	-
8034	KUAI1573	NM_020925.1	2034	C-ttgtatttggtgatacaacc	265220	811574	see also 8033 line	
8035	KUAI1573	NM_020925.1	2409	taactatgcgcctactacagc	265222	811588	see also 8033 line	
8036	KUAI1573	NM_020925.1	2435	accacatggcctctcaagtatt	265223	811590	see also 8033 line	
8037	KUAI1587	NM_020932.1	2490	aaactaagctgcctcaacaaga	380183	745932	-	-
8038	USP37	NM_020933.1	398	atgtctctctcaagattgaagt	189734	791591	-	-
8039	USP37	NM_020933.1	530	ttcaactaagctcaatacataaa	189738	791595	see also 8038 line	
8041	USP37	NM_020933.1	2012	gtgtctctgaagccacaattt	189774	791651	see also 8038 line	
8042	USP37	NM_020933.1	2018	tgctcttggaagccacaattt	189775	791652	see also 8038 line	
8043	GBA2	NM_020944.2	1321	Htcaagcagaacttttaacagg	189776	791654	see also 8038 line	
8044	GBA2	NM_020944.2	1327	ttcccttaagatgctttcttacc	220527	807770	-	-
8045	GBA2	NM_020944.2	1338	ctctccctctgagctgataacag	220530	807775	see also 8043 line	
8046	TRPM3	NM_020952.1	1120	ccggagctcagctccctcaatccg	220533	807778	see also 8043 line	
8047	TRPM3	NM_020952.1	1127	atggagctcccaactatcatgac	262014	846479	channel	-
8048	TRPM3	NM_020952.1	2439	gaatggagctggagctcatctbet	262038	846503	see also 8046 line	
8049	TRPM3	NM_020952.1	2441	gtctctggagctgctcatctbet	262039	846506	see also 8046 line	
8050	TRPM3	NM_020952.1	2500	atctctggctggagcagatatt	262041	846510	see also 8046 line	
8051	TRPM3	NM_020952.1	3083	aaggagctacgctctgaactct	262051	846522	see also 8046 line	
8052	MOV10	NM_020963.1	1338	accgttcaactgagctttcttcc	91822	508638	-	-
8053	MAGI-3	NM_020965.2	655	aggatcgaactgacacacacg	209324	606792	kinase related	-
8054	MAGI-3	NM_020965.2	2483	tactctgaatcaatacacttata	209332	606837	see also 8053 line	
8055	MAGI-3	NM_020965.2	2592	atgaactgaacactcttatatt	209354	606839	see also 8053 line	
8056	MAGI-3	NM_020965.2	2593	tggaactgaacactcttatata	209355	606840	see also 8053 line	
8057	MAGI-3	NM_020965.2	2595	gaactgaacactctataata	209356	606841	see also 8053 line	
8058	MAGI-3	NM_020965.2	3859	aggccaggaactctgcttgatacc	209372	606862	see also 8053 line	
8059	SCUBE2	NM_020974.1	1547	aagtgaactcttaactgaatag	152948	710091	-	-
8060	SCUBE2	NM_020974.1	2674	atctatgagctgacgaacactct	152948	710118	see also 8059 line	
8061	SCUBE2	NM_020974.1	3030	atccatgctcactgccaact	152952	710124	see also 8059 line	
8062	CKMT1	NM_020990.2	624	Htgaagagatgatctgttgc	209443	598805	kinase related	transcription_regulat
8063	NPZF2	NM_021005.2	1108	ctctgactgctgcagatataatt	8466	447192	transcription co- or.	transcription co- repressor
8064	NPZF2	NM_021005.2	1107	tgactctgctgcagatataatt	8467	447193	see also 8063 line	
8065	NPZF2	NM_021005.2	1703	ctctctgactgctgcagatattg	8474	447197	see also 8063 line	
8066	NPZF2	NM_021005.2	1780	tactctgctgcagcagattttac	8476	447200	see also 8063 line	

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8067	LZTS1	NM_021020.1	294	gaagcagaacactcttcaatca	6238	816896	transcription_regulat	-	-
8068	LZTS1	NM_021020.1	1867	atccctcctcgaagcactcagc	6239	816839	see also 8067 line	-	-
8069	TLX3	NM_021025.1	211	gagagcaggagctcacagct	380385	449590	transcription_regulat	transcription factor	-
8070	RAP2A	NM_021033.3	559	ccgctgacagctatgagaag	110583	518555	signal transduction	-	-
8071	MBNL1	NM_021038.1	1505	gacacagatcaaatitgonca	52480	474092	-	RAS small monomeric	-
8072	MBNL1	NM_021038.1	1521	tgcacactctcgaagaactgc	52481	474093	see also 8071 line	RNA binding	-
8073	MBNL1	NM_021038.1	1531	ttcgaagaactgcgaagtgaag	52482	474094	see also 8071 line	-	-
8074	MBNL1	NM_021038.1	1753	accgctgcacattttctcgtg	52487	474099	see also 8071 line	-	-
8075	MBNL1	NM_021038.1	2279	aacgctgcacacagcagcttaa	52475	474110	see also 8071 line	-	-
8076	DHH	NM_021044.2	1215	gcgaactgcacatgattgact	191331	584819	-	peptidase	-
8077	HON1	NM_021072.1	657	aagtgatcaagatgaattatta	261180	517904	channel	-	-
8078	HON1	NM_021072.1	1238	cttgcagtatcaagaagataaa	261198	517921	see also 8077 line	-	-
8079	NMT1	NM_021075.3	932	aactctgattaaatgaattctcc	215452	602739	-	glyco-/peptide N-tetradecanoyltrans	-
8080	DAB1	NM_021080.3	835	caactcggagagcaaatgtatg	319866	534267	-	ferase	-
8081	SLC15A2	NM_021082.2	608	atcaaatgcaggagacttgattto	256486	643923	-	peptidyl-hydrogen	-
8082	XK	NM_021083.2	863	tccentctccctgagacataga	271805	713658	-	symporter	-
8083	MTMR3	NM_021090.2	1361	gaactcttaccgagcactataga	193004	558962	-	transporter	-
8084	SLOCAT	NM_021091.1	1892	aacatctcagctcaagtgattg	122771	527355	phosphatase	-	-
8085	SLOCAT	NM_021091.1	2767	atctggagcaacttcgaagtctcc	122779	527372	see also 8084 line	sodium transporter	-
8086	RECK	NM_021111.1	222	aacccaagtctccgctgatttg	293083	662912	cell cycle	serine protease inhibitor	-
8087	RECK	NM_021111.1	1796	ctgtatggaaagtcacactatag	293142	662945	see also 8086 line	-	-
8088	RECK	NM_021111.1	2174	ctgctctgacgctctttgataat	293149	662956	see also 8086 line	-	-
8089	RECK	NM_021111.1	2175	tgcctgcacattctgtataatt	293150	662957	see also 8086 line	-	-
8090	RECK	NM_021111.1	2176	gcctgcacactctgtataatt	293151	662958	see also 8086 line	-	-
8091	CRY2	NM_021117.1	754	gaccttgagctgcacactataga	234008	618377	-	-	-
8092	CRY2	NM_021117.1	1193	gagacagagctccagctatttga	234012	618383	see also 8091 line	-	-
8093	CRY2	NM_021117.1	1195	gagacagagctccagctatttga	234013	618384	see also 8091 line	-	-
8094	CRY2	NM_021117.1	1385	tcctcctctcagatctatgata	234018	618389	see also 8091 line	-	-
8095	DLG3	NM_021120.1	1946	aagacagctctgaaacacttga	209293	534591	kinase related	guanylate kinase	-
8096	DLG3	NM_021120.1	2014	cgaggttaagtcagctatttat	209297	534594	see also 8095 line	-	-
8097	RTN1	NM_021136.1	611	tctgattctgagagagataga	295128	465577	see also 8095 line	-	-
8098	RTN1	NM_021136.1	2374	tctctgaggagctacataaat	235150	466055	signal transduction	signal transducer	-
8100	UTX	NM_021140.1	1195	tgcagcagcagtagcttatta	324923	650966	see also 8098 line	-	-
8101	UTX	NM_021140.1	1196	tgcagcagcagtagctattac	324924	650967	see also 8100 line	-	-

McLeod syndrome with neuroacanthosis (神経黒
色変性)におけるマクワイド症候群, McLeod
syndrome (マクワイド症候群)

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8102	UTX	NM_021140.1	1725	ttgcacaaagacacattttttgc	324935	650576	see also 8100 line		
8103	UTX	NM_021140.1	1915	agccctgcaaaacacactttct	324938	650078	see also 8100 line		
8104	UTX	NM_021140.1	4180	aaactctagcaactcttactta	324955	650733	see also 8100 line		
8105	XRC05	NM_021141.2	1211	ttcgaatgctctttgcacaaaga	20329	470390	kinase related		
8106	XRC05	NM_021141.2	1316	gaagcttcagacacatctgttt	20334	470391	see also 8105 line		
8107	XRC05	NM_021141.2	1318	gaactctgcacatactgttttc	20335	470392	see also 8105 line		
8108	DMTF1	NM_021145.1	1608	gcgcctgcttgagataatacagc	2782	458385	transcription_regulat		
8109	DMTF1	NM_021145.1	1915	algttttatcccccagacatttg	2805	458394	or, kinase related		
8110	DMTF1	NM_021145.1	1922	atcccacacattctttgaaaca	2807	458395	see also 8108 line		
8111	RAP1GDS	NM_021159.3	1726	tagcaagaactcttgatcaatgaa	298178	757187	GTPase activator		
8112	RAP1GDS	NM_021159.3	1586	acctatgcacactagtgaaactgt	298200	757222	see also 8111 line		
8113	BAT5	NM_021160.1	150	ttcagactctctgatactact	235827	621843	channel		
8114	KCNK10	NM_021161.3	986	aggagagcaaaactttttgattt	261240	644688	signal transduction		
8115	KCNK10	NM_021161.3	1041	ttcttatctcgaattgaaagaa	261242	644702	see also 8114 line		
8116	IGRP	NM_021176.1	362	gtctctgtttctcattatccac	380592	711051	-		
8117	RAP2C	NM_021183.3	1055	caagatatacaacaaatgaaga	110597	520239	signal transduction		
8118	RAP2C	NM_021183.3	1262	atctcaacgaattatctacttc	110601	520246	see also 8117 line		
8119	RAP2C	NM_021183.3	1298	aagcagaatcgaattgttgcacac	110602	520249	see also 8117 line		
8120	ZNF410	NM_021198.1	514	agactctacagccaaagatagac	380716	754132	transcription_regulat		
8121	ZNF410	NM_021198.1	1315	agcactatagcagatcttttaac	380730	754141	see also 8120 line		
8122	ZNF410	NM_021198.1	1316	gccactatagcagatcttttaac	380731	754142	see also 8120 line		
8123	PTBP2	NM_021190.1	463	gcagataatcatttaaacacac	65151	471286	-		
8124	PTBP2	NM_021190.1	576	ccgcccaagctccagctactgaga	65153	471290	see also 8123 line		
8125	PTBP2	NM_021190.1	581	caagcttcgaactctgataatgat	65156	471291	see also 8123 line		
8126	PTBP2	NM_021190.1	583	gaatctcgaactctgataatgata	65157	471292	see also 8123 line		
8127	PTBP2	NM_021190.1	793	ctgcacccaaagagatgattttt	65169	471297	see also 8123 line		
8128	PTBP2	NM_021190.1	849	atgtataaagaggagatttact	65170	471300	see also 8123 line		
8129	PTBP2	NM_021190.1	1317	ttgtatgaagagctgacacaaa	65177	471309	see also 8123 line		
8130	HOXD11	NM_021192.2	841	ctgcagacgcagctttttcttaa	380743	697137	transcription_regulat		
8131	HOXD11	NM_021192.2	842	tgacacagcagctttttcttaac	380744	697138	or		
8132	SLC30A1	NM_021194.1	1395	taacatttttttttttttttttt	266803	653921	see also 8130 line		
8133	CTDSP1	NM_021198.1	340	agacatcgcgcctctacttctaa	278890	650158	phosphatase		
8134	CTDSP1	NM_021198.1	342	caactcgcgcgcctctacttctaa	278891	650159	see also 8133 line		
8135	CTDSP1	NM_021198.1	756	gcagatagcgcgcctctacttctaa	278893	650161	see also 8133 line		
8136	CTDSP1	NM_021198.1	998	ccagctcgcgcgcctctacttctaa	278895	650164	see also 8133 line		
8137	C20orf10	NM_021202.1	978	acagctcgcgcgcctctacttctaa	380754	800961	-		
8138	APNCF1	NM_021203.2	546	taactcgcgcgcgcgcgcgcgcgc	108205	520540	receptor activity		
8139	APNCF1	NM_021203.2	547	agactcgcgcgcgcgcgcgcgcgc	108206	520541	see also 8138 line		
8140	C20orf77	NM_021215.2	438	tgactcgcgcgcgcgcgcgcgcgc	380765	729497	-		

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8141	C20orf77	NM_021215.2	437	aaactgcagaagccaatacaat	380766	729498	see also 8140 line	transcription_regulat	-
8142	DMRT3	NM_021240.2	1141	accgctgctgctgaggaatcct	2742	443082	or	-	-
8143	S1RA111	NM_021242.3	904	aagccatgacagctctcttattg	380881	725741	-	-	-
8144	RRAGD	NM_021244.2	957	ttgattatttgctctcaagaag	192754	586027	-	-	-
8145	RAE18	NM_021252.3	164	agcaacatactgctgctgctta	108934	519919	signal transduction	-	-
8146	RAE18	NM_021252.3	371	aaactactctcaagaagaatgca	108945	519930	see also 8145 line	protein transporter	-
8147	RAE18	NM_021252.3	434	tctggaagctcagataagaatgag	108947	519934	see also 8145 line	-	-
8148	TRIM39	NM_021252.2	1352	gtccagctctcagatcctcaatg	160500	559887	-	-	-
8149	TRIM39	NM_021252.2	1955	acccaagcagctgagcctattcc	160510	559897	see also 8148 line	-	-
8150	TRIM39	NM_021252.2	1959	aagcgtgtgagctatctctatga	160511	559898	see also 8148 line	-	-
8151	P1EKH41	NM_021622.2	2116	aaacaataagctactctcaaatc	173044	749304	-	-	-
8152	RISC	NM_021626.1	183	agttctgtgctgctatctatgc	187287	580950	-	-	-
8153	RISC	NM_021626.1	834	aactctatacaactctaaacaa	187288	580966	see also 8152 line	-	-
8154	SENP2	NM_021627.1	320	gaccaagatgagatgcttatt	135787	531256	signal transduction	-	-
8155	SENP2	NM_021627.1	523	ctcaaacctgagataaactctc	135791	531268	see also 8154 line	-	-
8156	C3BP1	NM_021633.2	916	accctttcatcagctctatcttc	128532	533037	-	-	-
8157	C3BP1	NM_021633.2	917	accctttcatcagctctatcttc	128533	533037	see also 8156 line	-	-
8158	C3BP1	NM_021633.2	921	tctctctcagctctgctatttc	128534	533034	see also 8156 line	-	-
8159	SP182	NM_021639.3	1028	tctctctgctgctgctatttc	380977	740874	-	-	-
8160	SP182	NM_021639.3	1031	tctctctgctgctgctatttc	380978	740874	see also 8159 line	-	-
8161	SP192	NM_021639.3	1252	tctctgctgctgctgctatttc	380981	740882	see also 8159 line	-	-
8162	TRB2	NM_021643.1	1266	atgggaatgctgctgctgctgctg	103058	495583	kinase related	-	-
8163	TRB2	NM_021643.1	1368	cgcccgagctgctgctgctgctg	103063	495586	see also 8162 line	-	-
8164	TRB2	NM_021643.1	1607	tgctctttgagcagaactatg	103071	495589	see also 8162 line	-	-
8165	TRB2	NM_021643.1	2110	gcgctgctgctgctgctgctgctg	103079	495598	see also 8162 line	-	-
8166	OTX2	NM_021726.2	839	cgagctctcaagttatgctcaag	8792	447533	or	transcription_regulat	-
8167	OTX2	NM_021726.2	953	ctcagctccatctggtctccactgc	8797	447537	see also 8166 line	-	-
8168	OTX2	NM_021726.2	1054	aaccactgtctgttgattata	8799	447538	see also 8166 line	-	-
8169	FOX42	NM_021784.3	577	cccccctacgcacatcaactcc	4012	443897	or	transcription_regulat	-
8170	ACE2	NM_021804.1	914	tggagtgagttatgcaaacctc	154479	555624	-	-	-
8171	ACE2	NM_021804.1	916	ggatgaatttgatggacaactct	154480	555625	see also 8170 line	-	-
8172	ACE2	NM_021804.1	2030	tctcagctctgctgctgctatgc	154528	555658	see also 8170 line	-	-
8173	SEC8	NM_021807.2	1580	caatgctctctctcagagcttct	65879	698701	-	-	-
8174	SEC8	NM_021807.2	2631	aagcaaatgctctgagcaatttt	65900	698716	see also 8173 line	-	-
8175	GALNT9	NM_021808.2	566	cgatgctgagatgctgctgctgctg	21247	812823	-	-	-
8176	SLC4A7	NM_021815.2	897	tggctgcaacacattttctctgc	272601	657004	-	-	-
8177	SAV1	NM_021816.2	1142	tggctgcaacacattttctctgc	322607	686729	signal transduction	-	-
8178	MD5025	NM_021825.3	637	aagcagcctctgagatactatct	381108	716879	-	-	-
8179	MD5025	NM_021825.3	702	cgagctgagctctgctgctgctg	381111	716980	see also 8178 line	-	-
8180	MD5025	NM_021825.3	980	tctgagcaacagtaataaattg	381115	716991	see also 8178 line	-	-

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8181	PEO1	NM_021830.3	827	aactgaatccgcacattac	234645	118900	-	-	-
8182	FLJ1333	NM_021831.3	757	ctatggactctctgattct	61654	480618	-	-	-
8183	FLJ12139	NM_021831.3	1925	ctgaagactctctgattct	61666	480640	see also 8182 line	-	-
8184	FLJ12139	NM_021831.3	1925	ctgaagactctctgattct	61671	480645	see also 8182 line	-	-
8185	FLJ12139	NM_021831.3	1700	catctgaacatctctgattct	61672	480647	see also 8182 line	-	-
8186	DTNB	NM_021807.3	309	tgaagactctctctgattct	130956	648920	-	-	-
8187	DTNB	NM_021807.3	330	tgaagactctctctgattct	130957	648921	see also 8186 line	-	-
8188	DTNB	NM_021807.3	388	acgtgaacactctctgattct	130965	648927	see also 8186 line	-	-
8189	DTNB	NM_021807.3	642	ccgtgaacactctctgattct	130976	648938	see also 8186 line	-	-
8190	DTNB	NM_021807.3	707	tcccgatctctctgattct	130978	648939	see also 8186 line	-	-
8191	DTNB	NM_021807.3	717	cagatctctctctgattct	130980	648940	see also 8186 line	-	-
8192	DTNB	NM_021807.3	1139	gaagactctctctgattct	130989	648945	see also 8186 line	-	-
8193	DTNB	NM_021807.3	1142	gaagactctctctgattct	130990	648946	see also 8186 line	-	-
8194	DTNB	NM_021807.3	1143	agctgaacactctctgattct	130991	648947	see also 8186 line	-	-
8195	DTNB	NM_021807.3	1319	cccacacagctctgattct	130995	648955	see also 8186 line	-	-
8196	QFL2	NM_021814.5	272	aagcgtgacacagcactctg	116139	521313	actin binding	-	-
8197	ALX4	NM_021826.1	110	tctctgactctctctctact	871	441857	transcription regulator	-	-
8198	ALX4	NM_021826.1	148	ctctctgactctctctctact	872	441858	see also 8197 line	-	-
8199	FLJ13220	NM_021927.1	1079	caacacacactctctctctg	57496	477388	-	-	-
8200	FLJ11785	NM_021927.1	376	gaagacacactctctctctg	381290	795016	-	-	-
8201	FLJ11785	NM_021930.2	1126	aagctactctctctctctg	381319	795027	see also 8200 line	-	-
8202	FLJ11785	NM_021930.2	1577	aactctctctctctctctg	381341	795033	see also 8200 line	-	-
8203	RIC-8	NM_021932.4	1549	agctctctctctctctctg	381377	745972	-	-	-
8204	SMAP1	NM_021940.2	247	agctctctctctctctctg	39390	487158	-	-	-
8205	TEX2	NM_021943.1	158	agctctctctctctctctg	284689	489081	-	-	-
8206	TEX2	NM_021943.1	245	agctctctctctctctctg	284691	489084	see also 8205 line	-	-
8207	CL4orf93	NM_021944.1	1370	caacacacactctctctg	381571	738759	-	-	-
8208	CL4orf93	NM_021944.1	1371	caacacacactctctctg	381518	738760	see also 8207 line	-	-
8209	FLJ13692	NM_021946.2	4199	agctctctctctctctctg	381585	804299	-	-	-
8210	SRR	NM_021947.1	179	aacagcgcacactctctctg	234541	618877	racemase and epimerase, acting on amino acids and derivatives	-	-
8211	ELAVL4	NM_021952.2	475	gacagctctctctctctg	47602	473754	mRNA binding, 3' UTR	-	-
8212	ELAVL4	NM_021952.2	485	agagctctctctctctctg	47603	473756	see also 8211 line	-	-
8213	ELAVL4	NM_021952.2	1315	gagagctctctctctctg	47621	473763	see also 8211 line	-	-
8214	ELAVL4	NM_021952.2	1319	caagctctctctctctctg	47622	473764	see also 8211 line	-	-
8215	GJA3	NM_021954.2	438	agagctctctctctctctg	381577	647290	connexon channel	-	-
8216	GRK2	NM_021956.2	923	agctctctctctctctctg	244459	632386	receptor activity, channel, signal transduction	-	-

paraneoplastic encephalomyelitis (パネオプラス
ティック脳脊髄炎)

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8217	TEAD1	750	aggaacatcgtgttttcttctt	381646	transcription_regulat	translation	regulator	-
8218	TEAD1	1142	ccacgactgctacacaaacac	381651	449457 or 449462	see also 8217 line	-	-
8219	ZNF148	433	tggcgcctcagacgaatgcagt	44210	470481 or 470494	transcription_regulat	specific RNA polymerase II transcription factor	-
8220	ZNF148	793	ccagagcgcctcagcctctcaga	44215	470494	see also 8219 line	-	-
8221	ZNF148	795	ggagccgcctcagcctcagcaga	44216	470495	see also 8219 line	-	-
8222	ZNF148	797	ggagccgcctcagcctcagcaga	44217	470496	see also 8219 line	-	-
8223	ZNF148	798	agccagctgactctcagcagaag	44218	470497	see also 8219 line	-	-
8224	ZNF148	892	ccctcaatctcagcctcttgagtc	44223	470500	see also 8219 line	-	-
8225	ZNF148	931	tggacagcagctcactctcagca	44226	470501	see also 8219 line	-	-
8226	ZNF148	1085	aacctcttcgctctgttgatgt	44225	470504	see also 8219 line	-	-
8227	ZNF148	1186	ccagacagatctgtttgaaacac	44232	470510	see also 8219 line	-	-
8228	ZNF148	1189	acacgctcgtctttgaaacatc	44233	470511	see also 8219 line	-	-
8229	ZNF148	1802	tggagagacgcctgactcttba	44251	470523	see also 8219 line	-	-
8230	ZNF148	1805	aaagaaagcgcctgactctcaac	44252	470524	see also 8219 line	-	-
8231	ZNF148	1953	agggcaacagctgagcctgaatg	44258	470528	see also 8219 line	-	-
8232	ZNF148	2265	gcccaacacctaactcttgaact	44266	470541	see also 8219 line	-	-
8233	ZNF148	2363	agctttgacatcagacgaatct	44267	470548	see also 8219 line	-	-
8234	ZNF148	2410	ttcccaactttgacatacgttg	44269	470548	see also 8219 line	-	-
8235	ZNF148	2672	ggagcaacactctgaattttcaga	44276	470553	see also 8219 line	-	-
8236	RELA	664	aggaacattgagtggtttctcag	10433	448092 or, apoptosis, kinase related	transcription_regulat	Rel A homodimer	-
8237	SLC22A3	1250	tcccttgcttgctgagcactctba	266523	654401	-	-	-
8238	SLC22A3	1251	ccctcttgcttgctgagcactctag	266524	654402	see also 8237 line	-	-
8239	OPTN	313	agcccttgagcactcaactcaag	312174	807184	signal transduction	-	glucocorticoid (糖皮质激素)
8240	OPTN	314	ggcctgagcactcaactcaactcag	312175	807185	see also 8239 line	-	-
8241	ZNF6	597	ggcctgactctcactatctcgtg	45769	798724	-	-	-
8242	CUZD1	2384	ttgaaagctgctccctcttttg	326373	688156	-	-	-
8243	ITAI1	715	ctccaaagctcactcaactgctca	47222	475947	apoptosis	-	-
8244	ITAI1	835	aactcatctgctcagctttttca	47228	475953	see also 8243 line	-	-
8245	ITAI1	1076	gttgagccacagctgctggaagt	47739	475960	see also 8243 line	-	-
8246	MTBP	324	tggtcttgcttgctcagagatc	381685	537711	-	-	-
8247	DEF6	1644	ggcagccacacagctgaaacact	141617	547128	-	-	-
8248	CSNK1G1	291	ttcagagcactcaacttaggttaa	77677	498942	kinase related, signal transduction	-	protein serine/threonine kinase
8249	CSNK1G1	292	tccagagcactcaacttaggttaa	77678	498943	see also 8248 line	-	-
8250	CSNK1G1	297	aactcacttaggttgaaacact	77680	498944	see also 8248 line	-	-
8251	CSNK1G1	722	atcccaaaacatacactcttba	77680	498962	see also 8248 line	-	-
8252	CSNK1G1	984	ctgcaaacctccctctggaagt	77694	498970	see also 8248 line	-	-
8253	CKNK13	1101	aagctgagcactctgactctca	261214	644773	channel	-	-

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8254	SLC4A10	NM_022058.2	1344	agaatctctctgcaaatg	11620	448575	-	-	-
8255	SLC4A10	NM_022058.2	1433	agaattcttttggaattt	11622	448576	see also 8254 line	-	-
8256	SLC4A10	NM_022058.2	1641	atgcaagatggagcattct	11626	448581	see also 8254 line	-	-
8257	SLC4A10	NM_022058.2	2303	gtctggttttaagtgctg	11649	448596	see also 8254 line	-	-
8258	PKNOX2	NM_022068.1	666	agggaacacatcgctgaacac	9401	447797	transcription_regulat	-	-
8259	FLJ13188	NM_022063.1	888	tgcctagggtctggaagaaga	381787	740032	or	-	-
8260	CL4orf133	NM_022067.2	1675	gcacatgtctgtctgtatgac	382015	750411	-	-	-
8261	CL4orf133	NM_022067.2	1788	ctcgaacgtgcgaatgagag	382018	750414	see also 8260 line	-	-
8262	FLJ23403	NM_022068.1	282	tggatgtctctctcttgattt	382024	776689	-	-	-
8263	FLJ23403	NM_022068.1	288	tgtctctctctcttgatgaac	382025	776691	see also 8262 line	-	-
8264	FLJ23403	NM_022068.1	417	ctgtgtctctctctgaagaatc	382028	776692	see also 8262 line	-	-
8265	FLJ22609	NM_022072.2	655	cacagctcttctgaatgaatt	382148	805049	-	-	-
8266	HP54	NM_022081.4	1233	ggctgctactctctataagact	127375	529504	-	-	-
8267	ZNF335	NM_022095.3	1647	ctctctcaagagacacatgtca	45266	815771	transcription_regulat	-	-
8268	ANKRD5	NM_022096.4	2289	aggcatctctgtctgtatgaat	137840	543894	or	-	-
8269	ANKRD5	NM_022096.4	2289	ggcatatctctgtatgagaa	137842	543895	see also 8268 line	-	-
8270	LOC43929	NM_022098.2	679	aggctaaacgaacatgattg	186645	580463	-	-	-
8271	GTL1	NM_022108.2	1662	tggatatactgtctcaactacc	272063	749007	-	-	-
8272	GTL1	NM_022108.2	1701	atggtgtctctctcatctatg	272064	749010	see also 8271 line	-	-
8273	GLSPN	NM_022111.2	2682	gaacbaagaacatttctcagg	130063	790077	-	-	-
8274	PRDM16	NM_022114.1	101	gtctcgtgacgtctgaataat	9848	649547	transcription_regulat	-	-
8275	PRDM16	NM_022114.1	103	gaacgtgaacgtctgaataat	9849	649548	or	-	-
8276	PRDM16	NM_022114.1	109	gaactggaataataatgaga	9852	649549	see also 8274 line	-	-
8277	PRDM16	NM_022114.1	1070	gaactgtgaatgctgaacacgc	9860	649558	see also 8274 line	-	-
8278	FIGL1	NM_022116.2	625	aagctctgaactctgattgtaat	82370	502440	-	-	-
8279	FIGL1	NM_022116.2	627	gtctgactgtgattgtaataa	82371	502441	see also 8278 line	-	-
8280	FIGL1	NM_022116.2	2204	ctctgaactgctcaccataca	82421	502485	see also 8278 line	-	-
8281	SE20-4	NM_022117.1	983	aagacatttctcgtctctgacc	38832	458703	cell cycle,	-	-
8282	CT3orf10	NM_022118.3	1383	cacaactctgatactgaacac	56267	478553	signal_transduction	-	-
8283	CT3orf10	NM_022118.3	1627	aagtctctcgaatgaataat	56272	478360	kinase related	-	-
8284	NPAS3	NM_022123.1	885	gaactctccagccaactatg	254678	639240	see also 8282 line	-	-
8285	NPAS3	NM_022123.1	931	tgcctccctccagccaactaa	254679	639241	transcription_regulat	-	-
8286	NPAS3	NM_022123.1	933	gctctccctccagccaactaa	254680	639242	see also 8284 line	-	-
8287	NPAS3	NM_022123.1	936	tccctccagccaactgaatga	254681	639243	see also 8284 line	-	-
8288	NPAS3	NM_022123.1	942	tccatgaactgaactgaatga	254682	639244	see also 8284 line	-	-
8289	CDH23	NM_022124.2	2647	atggccacacccgaacatg	139969	553565	see also 8289 line	-	-
8290	CDH23	NM_022124.2	5051	gcgtgcatcggatgaacagc	139982	553587	see also 8289 line	-	-

8201	RBKX	NM_022128.1	88	cgagcagctgagctgctctctct	209594	768744	kinase related	-	rhokinase
8202	GOLPH3	NM_022130.3	546	gagatgagcagctgagctctctct	382405	687900	-	-	-
8203	GOLPH3	NM_022130.3	663	tccacacagagctgagctctctct	382412	687900	see also 8292 line	-	-
8204	GOLPH3	NM_022130.3	803	atgacgagcagctgagctctctct	382417	687907	see also 8292 line	-	-
8205	GOLPH3	NM_022130.3	803	tccagcagcagctgagctctctct	382418	687908	see also 8292 line	-	-
8206	CLSTN2	NM_022131.1	1415	tccatgctgagctgagctctctct	140793	546433	-	-	-
8207	CLSTN2	NM_022131.1	1423	tggagcagcagctgagctctctct	140794	546434	see also 8296 line	-	-
8208	SNX16	NM_022133.2	839	tcttcccaaacgctgagctctctct	270610	681918	-	-	-
8209	SNX16	NM_022133.2	840	tcttcccaaacgctgagctctctct	270611	681919	see also 8298 line	-	-
8210	SAMSN1	NM_022136.2	591	cgagctatctctgagcagctctctct	382437	553448	-	-	-
8211	SMOCl	NM_022137.2	708	cgagctaacacctctgagcagctctct	153078	564177	-	-	-
8212	SMOCl	NM_022137.2	1521	ggctctgagctgagctgagctctctct	153091	564194	see also 8301 line	-	-
8213	EPB411A4	NM_022140.2	300	agagctatctctgagctgagctctctct	279712	661188	-	-	structural molecule
8214	EPB411A4	NM_022140.2	524	atcacacagctgagctgagctctctct	279715	661194	see also 8303 line	-	-
8215	EPB411A4	NM_022140.2	532	tgagcagctgagctgagctctctctct	279718	661196	see also 8303 line	-	-
8216	EPB411A4	NM_022140.2	534	gagctctctctgagctgagctctctct	279719	661197	see also 8303 line	-	-
8217	EPB411A4	NM_022140.2	1309	agagctgagctgagctgagctctctct	279731	661218	see also 8303 line	-	-
8218	LRRC4	NM_022143.3	1579	ctgtgtctcagcagctgagctctctct	382492	752573	-	-	-
8219	LRRC4	NM_022143.3	2030	ccacacactctgagctgagctctctct	382496	752578	see also 8308 line	-	-
8220	LRRC4	NM_022143.3	2031	accacactctctgagctgagctctctct	382497	752579	see also 8308 line	-	-
8221	LRRC4	NM_022143.3	2033	catctctctgagctgagctctctctct	382498	752580	see also 8308 line	-	-
8222	LRRC4	NM_022143.3	2037	atctctgagctgagctgagctctctct	382499	752581	see also 8308 line	-	-
8223	TMND	NM_022144.1	738	tggagctaacctgagctgagctctctct	328002	691278	-	-	-
8224	TMND	NM_022144.1	739	tggagctaacctgagctgagctctctct	328003	691279	see also 8313 line	-	-
8225	PRAGC	NM_022157.2	519	agatttcaatccagctgagctctctct	173721	570435	gprc, apoptosis, transcription_regulat	-	-
8226	PRAGC	NM_022157.2	1088	tccacatcttccagctgagctctctct	173740	570449	see also 8315 line	-	-
8227	FNOK	NM_022158.2	597	ggagcagctgagctgagctctctctct	126618	606531	kinase related	-	transferase
8228	CARD15	NM_022162.1	1214	ctcagcagctgagctgagctctctctct	75194	497107	apoptosis	-	apoptosis regulator
8229	CARD15	NM_022162.1	1217	ctcagcagctgagctgagctctctctct	75195	497108	see also 8318 line	-	arthritis(関節炎)
8230	XYL72	NM_022167.1	1876	ctcagcagctgagctgagctctctctct	210706	599578	-	-	-
8231	XYL72	NM_022167.1	1880	agcagctgagctgagctgagctctctct	210707	599580	see also 8320 line	-	-
8232	MDA5	NM_022168.2	1078	ctcagctgagctgagctgagctctctct	64116	480529	-	-	melanoma(メラノーマ)
8233	MDA5	NM_022168.2	1144	ctcagctgagctgagctgagctctctct	64118	480530	see also 8322 line	-	-
8234	MDA5	NM_022168.2	2762	agatttccagctgagctgagctctctct	64155	480562	see also 8322 line	-	-
8235	MDA5	NM_022168.2	2767	tccagctgagctgagctgagctctctct	64156	480563	see also 8322 line	-	-
8236	ABOG4	NM_022168.2	1343	agagctgagctgagctgagctctctct	71159	493002	ATP-binding cassette (ABC) transporter	-	-
8237	TAI1	NM_022173.1	477	ggctcagcagctgagctgagctctctct	47745	475639	apoptosis	-	-
8238	ICAI	NM_022307.1	837	agatttcaatccagctgagctctctctct	323802	701207	poly(A) binding	-	-
8239	ICAI	NM_022307.1	838	agatttcaatccagctgagctctctctct	323803	701208	see also 8328 line	-	diabetes(糖尿病)
8240	ICAI	NM_022307.1	1067	accctgagctgagctgagctgagctctct	323816	701219	see also 8328 line	-	-

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				110242	513026	signal transduction	protein transporter	
8331	RYAB38	NM 022337.1	1501	H0tdaagacatttgcacacac	161383	555387	-	-
8332	ZFYVE20	NM 022340.1	251	gaagatttgcatttgcacattg	161384	555388	see also 8332 line	-
8333	ZFYVE20	NM 022340.1	336	baagatttgcacatttgcattg	161404	555002	see also 8332 line	-
8334	ZFYVE20	NM 022340.1	996	aaagatttgcacatttgcattg	87853	506068	motor	-
8335	KIF9	NM 022342.2	993	baagatttgcacatttgcattg	87854	506069	-	-
8336	KIF9	NM 022342.2	995	baagatttgcacatttgcattg	87854	506069	see also 8335 line	-
8337	IFRG15	NM 022347.1	40	caagtttgcatttgcatttgcatt	339266	712620	-	-
8338	IFRG15	NM 022347.1	42	gaagtttgcatttgcatttgcatt	339267	712621	see also 8337 line	-
8339	IFRG15	NM 022347.1	67	gaagtttgcatttgcatttgcatt	339268	712622	see also 8337 line	-
8340	IFRG15	NM 022347.1	171	gaagtttgcatttgcatttgcatt	339269	712623	see also 8337 line	-
8341	IFRG15	NM 022347.1	272	gaagtttgcatttgcatttgcatt	339270	712624	see also 8337 line	-
8342	IFRG15	NM 022351.2	586	gaagtttgcatttgcatttgcatt	339271	712625	see also 8337 line	-
8343	OSGEP1	NM 022351.1	1267	gaagtttgcatttgcatttgcatt	142769	542731	-	-
8344	LEPRE1	NM 022356.2	776	gaagtttgcatttgcatttgcatt	184293	732515	-	-
8345	POPD3	NM 022361.3	1119	gaagtttgcatttgcatttgcatt	224338	609826	-	-
8346	DNAJC1	NM 022365.2	254	gaagtttgcatttgcatttgcatt	283068	694810	-	-
8347	DNAJC1	NM 022365.2	356	gaagtttgcatttgcatttgcatt	25253	458416	-	-
8348	DNAJC1	NM 022365.2	467	gaagtttgcatttgcatttgcatt	25255	458417	see also 8346 line	-
8349	DNAJC1	NM 022365.2	514	gaagtttgcatttgcatttgcatt	25258	458424	see also 8346 line	-
8350	DNAJC1	NM 022365.2	794	gaagtttgcatttgcatttgcatt	25259	458427	see also 8346 line	-
8351	FLJ12287	NM 022367.2	944	gaagtttgcatttgcatttgcatt	25272	458435	see also 8346 line	-
8352	FLJ22313	NM 022373.3	723	gaagtttgcatttgcatttgcatt	3733	637333	receptor	-
8353	FLJ22313	NM 022373.3	848	gaagtttgcatttgcatttgcatt	382754	710869	-	-
8354	FLJ22313	NM 022373.3	1513	gaagtttgcatttgcatttgcatt	382758	710873	see also 8352 line	-
8355	ARL6P2	NM 022374.1	1452	gaagtttgcatttgcatttgcatt	382760	710883	see also 8352 line	-
				gaagtttgcatttgcatttgcatt	106809	519018	-	-
							ATP-binding cassette (ABC) transporter	
8356	ABCC8	NM 022437.2	902	gaagtttgcatttgcatttgcatt	71208	493077	-	-
8357	ABCC8	NM 022437.2	1292	gaagtttgcatttgcatttgcatt	71212	493084	see also 8356 line	-
8358	SLC13A1	NM 022444.3	1617	gaagtttgcatttgcatttgcatt	25782	640833	-	-
8359	SLC13A1	NM 022444.3	1664	gaagtttgcatttgcatttgcatt	25784	640895	see also 8356 line	-
8360	AD2A	NM 022451.9	985	gaagtttgcatttgcatttgcatt	382806	710973	-	-
8361	RNF25	NM 022453.2	492	gaagtttgcatttgcatttgcatt	233353	617673	-	-
				gaagtttgcatttgcatttgcatt			transcription regulat	
8362	NSD1	NM 022455.3	139	gaagtttgcatttgcatttgcatt	33973	462937	or	-
8363	NSD1	NM 022455.3	140	gaagtttgcatttgcatttgcatt	33974	462938	see also 8362 line	-
8364	NSD1	NM 022455.3	141	gaagtttgcatttgcatttgcatt	33975	462939	see also 8362 line	-
8365	NSD1	NM 022455.3	147	gaagtttgcatttgcatttgcatt	33976	462940	see also 8362 line	-
8366	NSD1	NM 022455.3	176	gaagtttgcatttgcatttgcatt	33977	462941	see also 8362 line	-
8367	NSD1	NM 022455.3	219	gaagtttgcatttgcatttgcatt	33978	462945	see also 8362 line	-
8368	NSD1	NM 022455.3	2718	gaagtttgcatttgcatttgcatt	34050	463017	see also 8362 line	-
8369	NSD1	NM 022455.3	4809	gaagtttgcatttgcatttgcatt	34108	463078	see also 8362 line	-
8370	NSD1	NM 022455.3	5087	gaagtttgcatttgcatttgcatt	34114	463087	see also 8362 line	-
8371	NSD1	NM 022455.3	5100	gaagtttgcatttgcatttgcatt	34115	463088	see also 8362 line	-

Stibsterolemia(-), atherosclerosis(粥状硬化症)

8372	NSD1	NM_022455.3	5141	gcccgaactcatgagcattt	34116	483089	see also 8362 line
8373	NSD1	NM_022455.3	5304	gcccacacccagagatttct	34119	483094	see also 8362 line
8374	NSD1	NM_022455.3	5681	ttccagatctcagatttct	34132	483109	see also 8362 line
8375	NSD1	NM_022455.3	6690	tttttttttttttttttttt	34158	483134	see also 8362 line
8376	COP1	NM_022457.4	1286	tttttttttttttttttttt	382888	703636	-
8377	COP1	NM_022457.4	1422	tttttttttttttttttttt	382892	703641	see also 8376 line
8378	COP1	NM_022457.4	1428	atcattcatttttttttttt	382893	703642	see also 8376 line
8379	COP1	NM_022457.4	1428	atcattcatttttttttttt	382894	703643	see also 8376 line
8380	COP1	NM_022457.4	1466	ggttttttttttttttttt	382896	703645	see also 8376 line
8381	COP1	NM_022457.4	1542	ggttttttttttttttttt	382897	703649	see also 8376 line
8382	COP1	NM_022458.3	256	ggttttttttttttttttt	271663	653210	-
8383	XP04	NM_022458.3	1573	tacttttttttttttttt	271703	653247	protein transporter
8384	XP04	NM_022458.3	1802	ccagtttttttttttttt	271708	653252	see also 8382 line
8385	XP04	NM_022458.3	2072	aaagaaagggcaactttg	271714	653261	see also 8382 line
8386	XP04	NM_022458.3	2072	aaagaaagggcaactttg	271715	653262	see also 8382 line
8387	XP04	NM_022458.3	3177	gttttttttttttttttt	271757	653300	see also 8382 line
8388	XP04	NM_022458.3	3362	tttttttttttttttttt	271767	653305	see also 8382 line
8389	XP04	NM_022458.3	3363	tttttttttttttttttt	271768	653306	see also 8382 line
8390	CHS18	NM_022467.3	1969	agacttttttttttttt	217303	605419	-
8391	WIG1	NM_022470.2	981	ctccaaagggcaactttg	55775	476009	-
8392	MPP5	NM_022474.2	1108	tttttttttttttttttt	318853	681254	-
8393	MPP5	NM_022474.2	1160	atcatttttttttttttt	318854	681255	see also 8392 line
8394	MPP5	NM_022474.2	1404	atcatttttttttttttt	318862	681261	see also 8392 line
8395	MPP5	NM_022474.2	2219	gttttttttttttttttt	318878	681283	see also 8392 line
8396	MPP5	NM_022474.2	2415	agtttttttttttttttt	318895	681295	see also 8392 line
8397	HIP	NM_022475.1	1219	caagaaagggcaactttg	383213	535735	-
8398	HIP	NM_022475.1	1221	tttttttttttttttttt	383214	535737	see also 8397 line
8399	HIP	NM_022475.1	1222	tttttttttttttttttt	383215	535738	see also 8397 line
8400	HIP	NM_022475.1	1515	tttttttttttttttttt	383221	535748	see also 8397 line
8401	NDRG3	NM_022477.2	768	tttttttttttttttttt	238787	622288	-
8402	FJL12587	NM_022480.2	231	tttttttttttttttttt	131292	532635	-
8403	ARAP3	NM_022481.4	1997	tttttttttttttttttt	21469	458750	signal transduction
8404	ARAP3	NM_022481.4	2549	tttttttttttttttttt	21481	458755	see also 8403 line
8405	ARAP3	NM_022481.4	4194	tttttttttttttttttt	21495	458778	see also 8403 line
8406	ARAP3	NM_022481.4	4195	tttttttttttttttttt	21496	458779	see also 8403 line
8407	ARAP3	NM_022481.4	4196	tttttttttttttttttt	21497	458780	see also 8403 line
8408	ARAP3	NM_022481.4	4460	tttttttttttttttttt	21500	458787	see also 8403 line
8409	ZNF336	NM_022482.3	181	tttttttttttttttttt	45280	542428	transcription regulat
8410	ZNF336	NM_022482.3	1426	tttttttttttttttttt	45304	542450	see also 8409 line
8411	ZNF336	NM_022482.3	1469	tttttttttttttttttt	45307	542453	see also 8409 line
8412	APG3	NM_022483.3	170	tttttttttttttttttt	383430	724734	-
8413	APG3	NM_022483.3	274	tttttttttttttttttt	383431	724735	see also 8412 line
8414	APG3	NM_022483.3	425	tttttttttttttttttt	383435	724742	see also 8412 line

Alzheimer disease (アルツハイマー病)

8415	AP03	NM_022486.3	428	atggctgagctccatcatcacaca	383436	724743	see also 8412 line
8416	AP03	NM_022486.3	429	atggctgagctccatcatcacaca	383448	724751	see also 8412 line
8417	AP03	NM_022486.3	772	atggctgagctccatcatcacaca	383452	724757	see also 8412 line
8418	AP03	NM_022486.3	1008	atggctgagctccatcatcacaca	383452	724757	see also 8412 line
8419	ACTR6	NM_022486.3	84	atggctgagctccatcatcacaca	296378	720705	-
8420	DNMT3A	NM_022552.3	2675	atccacgctgagctgagctgag	25452	458993	-
8421	ADPH4	NM_022568.2	1170	atgcttccacgctgagctgag	228368	613428	-
8422	ND514	NM_022568.1	1682	ctggcactgagctgagctgag	217707	605753	-
8423	ND514	NM_022568.1	1683	ctggcactgagctgagctgag	217707	605754	see also 8422 line
8424	HOX8	NM_022658.2	496	gaagcagctgagctgagctgag	5191	444830	transcription_regulat
8425	HOX8	NM_022658.2	529	ctctcgcgcacacacacacag	5192	444831	or transcription factor
8426	HOX8	NM_022658.2	555	aggcagaagctgagctgagctg	5193	444832	see also 8424 line
8427	ANAPC1	NM_022662.1	2415	atgttgagctgagctgagctgag	383636	697650	-
8428	ANAPC1	NM_022662.1	5279	tacttgagctgagctgagctgag	383675	697724	see also 8427 line
8429	NEUROD6	NM_022728.2	755	gaacttaccgctgagctgagctg	33777	482658	transcription_regulat
8430	NEUROD6	NM_022728.2	1012	caagcagctgagctgagctgag	33783	482665	or transcription factor
8431	NEUROD6	NM_022728.2	1013	aggcagctgagctgagctgag	33784	482666	see also 8429 line
8432	NEUROD6	NM_022728.2	1019	tggcagctgagctgagctgag	33788	482667	see also 8429 line
8433	NEUROD6	NM_022728.2	1136	tggcagctgagctgagctgag	33793	482673	see also 8429 line
8434	COPS7B	NM_022730.1	404	atctgagctgagctgagctgag	383740	781938	-
8435	COPS7B	NM_022730.1	478	ctggcagctgagctgagctgag	383743	781939	see also 8434 line
8436	LOC84744	NM_022733.1	263	ctctcgcgcacacacacacag	31012	747545	-
8437	LOC84744	NM_022733.1	363	actcttgcgcgcacacacacag	31016	747547	see also 8436 line
8438	LOC84744	NM_022733.1	438	gaagcagctgagctgagctgag	31020	747549	see also 8436 line
8439	LOC84744	NM_022733.1	574	caagcagctgagctgagctgag	31023	747553	see also 8436 line
8440	LOC84744	NM_022733.1	881	tggcagctgagctgagctgag	31028	747559	see also 8436 line
8441	ACBD3	NM_022735.3	1608	ctgctcagctgagctgagctgag	172438	598935	-
8442	FLJ14153	NM_022736.1	277	ctgctcagctgagctgagctgag	273510	655047	-
8443	FLJ14153	NM_022736.1	284	tctctgagctgagctgagctgag	273511	655048	see also 8442 line
8444	HIPK2	NM_022740.1	131	tggcctcagctgagctgagctgag	84765	503489	transcription co-
8445	HIPK2	NM_022740.1	240	cggttccacagctgagctgagctg	84767	503490	repressor
8446	HIPK2	NM_022740.1	528	caagaagctgagctgagctgagctg	84771	503498	see also 8444 line
8447	HIPK2	NM_022740.1	1390	gggcaagaagctgagctgagctg	84785	503507	see also 8444 line
8448	HIPK2	NM_022740.1	1766	atctgagctgagctgagctgagctg	84795	503516	see also 8444 line
8449	HIPK2	NM_022740.1	1928	atctcgaagctgagctgagctgag	84795	503517	see also 8444 line
8450	HIPK2	NM_022740.1	1929	tcccgagctgagctgagctgagctg	84798	503518	see also 8444 line
8451	SMYD3	NM_022743.1	1174	caagcagctgagctgagctgagctg	383848	728375	-
8452	FLJ13868	NM_022744.1	415	tggcctgagctgagctgagctgag	383852	757575	-
8453	FLJ13868	NM_022744.1	1298	tggcctgagctgagctgagctgag	383860	757583	see also 8452 line
8454	FLJ22053	NM_022752.2	2043	aggcagctgagctgagctgagctg	324723	789197	-
8455	C20orf81	NM_022760.3	1798	ggagctgagctgagctgagctgag	383992	804032	-

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8456	G11orf1	NM_022761.1	185	gcagatccaccataatggagata	271415	713031	-	-
8457	FLJ12318	NM_022762.3	137	cagatgggaagagctctatcttc	384009	686461	-	-
8458	FAD104	NM_022763.2	233	ttctatgctccctccgtctatcttc	243973	631142	-	-
8459	FAD104	NM_022763.2	236	agctctgggaagctccgataaacg	243974	631143	see also 8458 line	-
8460	FAD104	NM_022763.2	2724	ctgggaagagctccgataaacg	244038	631192	see also 8458 line	-
8461	FAD104	NM_022763.2	2886	ggccctcattgctcagctcattca	244046	631204	see also 8458 line	-
8462	FLJ12085	NM_022771.3	42	gtggcctggagagctctatcttga	384032	717892	-	-
8463	FLJ12085	NM_022771.3	44	gagcagagagagctctatcttgaac	384033	717893	see also 8462 line	-
8464	FLJ12085	NM_022771.3	176	gagcagatctgatgatctgctgag	384039	718000	see also 8462 line	-
8465	FLJ12085	NM_022771.3	1818	ttgatgtggaagataactctgc	384089	718054	see also 8462 line	-
8466	OSBP1.1	NM_022776.3	560	agctggcctctggatgaactctg	303425	672204	-	-
8467	OSBP1.1	NM_022776.3	1091	ggcaactatgaactctgaattaatg	303444	672225	see also 8466 line	-
8468	OSBP1.1	NM_022776.3	1593	ggatctactactcactcattcttca	303452	672236	see also 8466 line	-
DKFZP434								
DKFZP434	L0117	NM_022778.2	1473	gtcaagagctctgtgataaacatct	384152	753227	receptor activity	-
8470	L0117	NM_022778.2	1477	agagctctgtgataaacatctaat	384153	753228	see also 8469 line	-
8471	FLJ13910	NM_022780.2	553	aaccatttggagtaattatgaa	384171	715369	-	-
8472	FLJ13910	NM_022780.2	1114	ttctctcaaacacacagatgaac	384187	715387	see also 8471 line	-
8473	RNF38	NM_022781.3	580	atctctgtctcgcatactcttcc	384195	786421	-	-
8474	RNF38	NM_022781.3	583	ctctctctcagatctcattctt	384196	786422	see also 8473 line	-
8475	RNF38	NM_022781.3	669	acctctcaacctctcgaatctctc	384199	786423	see also 8473 line	-
8476	RNF38	NM_022781.3	951	agctctcaatctcaatctctctg	384205	786425	see also 8473 line	-
8477	FLJ12428	NM_022783.1	886	atcgaaatctcaatctctctctg	315870	681541	-	-
8478	FLJ12428	NM_022783.1	889	atcgaaatctcaatctctctctg	315871	681542	see also 8477 line	-
8479	FLJ12428	NM_022783.1	1104	aggaagatctcaatctctctctg	315873	681545	see also 8477 line	-
8480	PNV	NM_022825.1	1363	gtgattctctcagctctctctg	384270	539124	-	-
8481	AXOT	NM_022826.1	604	gtccagcagctgggtctcttcaac	384287	710593	-	-
8482	AXOT	NM_022826.1	616	gtgattctctcagctctctctg	384290	710595	see also 8481 line	-
8483	AXOT	NM_022826.1	621	ttctcaactctcaatctctatct	384291	710596	see also 8481 line	-
8484	AXOT	NM_022826.1	2120	agctctcagctctctctctctg	384325	710643	see also 8481 line	-
8485	SLC13A3	NM_022829.3	1231	ctctcaagctgggtctctctctg	257304	640347	-	-
8486	SLC13A3	NM_022829.3	1646	ttgcacctcgtctctctctctctg	257311	640350	see also 8485 line	-
8487	USP46	NM_022832.2	237	ttgattctctcattctctgaa	190015	561783	-	-
8488	USP46	NM_022832.2	416	ttgcctctctcacaacaaagaat	190023	561786	see also 8487 line	-
8489	USP46	NM_022832.2	797	gtgtgtgtgacaacaaatatt	190033	561804	see also 8487 line	-
8490	FLJ28333	NM_022832.2	797	actcaaatgtctctctctctg	384532	735404	-	-
8491	MPP5.1	NM_022839.2	773	ctcgaagatctctcacaaga	285914	658677	-	-
8492	FLJ23017	NM_022840.2	788	ttggtgtgtctctctctctctg	27287	751012	-	-
8493	FLJ23017	NM_022840.2	789	aggtgtgtgtctctctctctctg	27288	751013	see also 8492 line	-
8494	PCDH20	NM_022843.2	1380	gtgtctctcagagtaataaacg	149882	544612	-	-
8495	PCDH20	NM_022843.2	2443	atctgtctctctcagagaggt	149909	544646	see also 8494 line	-
8496	PAPOLG	NM_022894.2	418	tggtctctgtgaattgaacat	52065	490681	polynucleotide adenylyltransferase	-

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8497	PAPOLG	NM_022894.2	419	ttcttgaattgaacaatttta	53268	480582	see also 8496 line
8498	PAPOLG	NM_022894.2	506	ttttgttgaaattttccacattt	53269	480584	see also 8496 line
8499	PAPOLG	NM_022894.2	714	ttttgttgaaattttccacattt	53270	480586	see also 8496 line
8500	PAPOLG	NM_022894.2	745	ttttgttgaaattttccacattt	53271	480588	see also 8496 line
8501	PAPOLG	NM_022894.2	1123	ttttgttgaaattttccacattt	53272	480590	see also 8496 line
8502	PAPOLG	NM_022894.2	1218	ttttgttgaaattttccacattt	53273	480592	see also 8496 line
8503	PAPOLG	NM_022894.2	1221	ttttgttgaaattttccacattt	53274	480594	see also 8496 line
8504	PAPOLG	NM_022894.2	1413	ttttgttgaaattttccacattt	53275	480596	see also 8496 line
8505	PAPOLG	NM_022894.2	1438	ttttgttgaaattttccacattt	53276	480598	see also 8496 line
8506	PAPOLG	NM_022894.2	1442	ttttgttgaaattttccacattt	53277	480600	see also 8496 line
8507	PAPOLG	NM_022894.2	2304	ttttgttgaaattttccacattt	53278	480602	see also 8496 line
8508	PAPOLG	NM_022894.2	2309	ttttgttgaaattttccacattt	53279	480604	see also 8496 line
8509	PAPOLG	NM_022894.2	2466	ttttgttgaaattttccacattt	53280	480606	see also 8496 line
8510	PAPOLG	NM_022894.2	405	ttttgttgaaattttccacattt	53281	480608	see also 8496 line
8511	PAPOLG	NM_022894.2	406	ttttgttgaaattttccacattt	53282	480610	see also 8496 line
8512	PAPOLG	NM_022894.2	1598	ttttgttgaaattttccacattt	53283	480612	see also 8496 line
8513	PAPOLG	NM_022894.2	1673	ttttgttgaaattttccacattt	53284	480614	see also 8496 line
8514	PAPOLG	NM_022894.2	1674	ttttgttgaaattttccacattt	53285	480616	see also 8496 line
8515	PAPOLG	NM_022894.2	2165	ttttgttgaaattttccacattt	53286	480618	see also 8496 line
8516	PAPOLG	NM_022894.2	2554	ttttgttgaaattttccacattt	53287	480620	see also 8496 line
8517	PAPOLG	NM_022894.2	2573	ttttgttgaaattttccacattt	53288	480622	see also 8496 line
8518	PAPOLG	NM_022894.2	3000	ttttgttgaaattttccacattt	53289	480624	see also 8496 line
8519	BQL11B	NM_022898.1	467	ttttgttgaaattttccacattt	53290	480626	see also 8496 line
8520	ACTR8	NM_022898.3	1182	ttttgttgaaattttccacattt	53291	480628	see also 8496 line
8521	CASI	NM_022900.3	333	ttttgttgaaattttccacattt	53292	480630	see also 8496 line
8522	CASI	NM_022900.3	334	ttttgttgaaattttccacattt	53293	480632	see also 8496 line
8523	CASI	NM_022900.3	401	ttttgttgaaattttccacattt	53294	480634	see also 8496 line
8524	CASI	NM_022900.3	403	ttttgttgaaattttccacattt	53295	480636	see also 8496 line
8525	CASI	NM_022900.3	709	ttttgttgaaattttccacattt	53296	480638	see also 8496 line
8526	CASI	NM_022900.3	1786	ttttgttgaaattttccacattt	53297	480640	see also 8496 line
8527	SLC30A5	NM_022902.2	1789	ttttgttgaaattttccacattt	53298	480642	see also 8496 line
8528	SLC30A5	NM_022902.2	1789	ttttgttgaaattttccacattt	53299	480644	see also 8496 line
8529	NDRG4	NM_022910.1	878	ttttgttgaaattttccacattt	53300	480646	see also 8496 line
8530	FLJ13110	NM_022912.1	324	ttttgttgaaattttccacattt	53301	480648	see also 8496 line
8531	DKFZp761	NM_022913.1	1388	ttttgttgaaattttccacattt	53302	480650	see also 8496 line
8532	DKFZp761	NM_022913.1	1389	ttttgttgaaattttccacattt	53303	480652	see also 8496 line
8533	DKFZp761	NM_022913.1	1390	ttttgttgaaattttccacattt	53304	480654	see also 8496 line
8534	DKFZp761	NM_022913.1	1833	ttttgttgaaattttccacattt	53305	480656	see also 8496 line

8535	Cl169	DKFZp761	2220	tcctctaacgcaggtgaatga	384846	734892	see also 8551 line	-	-
8536	FLJ21104	NM_023918.2	557	tacattttctgcattgtctga	384907	691473	-	-	molecular_function unknown
8537	TM6SF1	NM_0230303.1	1010	atgcgtagaactctctgtctctc	264832	693464	-	-	-
8538	FLJ21919	NM_023015.3	847	tgcgaagccccaagattctacc	384986	757061	-	-	-
8539	FLJ21919	NM_023015.3	1263	ttccgaacagcttgattgaattt	384994	757071	see also 8558 line	-	-
8540	FLJ21919	NM_023015.3	2112	aggagagagctgtatgcatt	385022	757095	see also 8558 line	-	-
8541	FLJ21919	NM_023015.3	2496	ctctgtactatatttttagaac	385028	757101	see also 8558 line	-	-
8542	FLJ21919	NM_023015.3	2602	tgtctaacctctctctctacc	385032	757104	see also 8558 line	-	-
8543	FLJ21919	NM_023015.3	2919	ttctcaactactctctctgaac	385038	757108	see also 8558 line	-	-
8544	FLJ21919	NM_023015.3	3452	ttctccctctccagggaataaga	385043	757113	see also 8558 line	-	-
8545	13CDNA73	NM_023037.1	1138	ttctccctctccagggaataaga	67625	780538	-	-	-
8546	13CDNA73	NM_023037.1	1729	tgtgttttaaatgttgaaatga	67642	780548	see also 8545 line	-	-
8547	13CDNA73	NM_023037.1	9362	ctgagagcagcaggtactctgac	67842	804256	see also 8545 line	-	-
8548	FLJ13855	NM_023079.2	375	tactcttgatctctcaagtctc	228872	616007	-	-	-
8549	FLJ13855	NM_023079.2	485	accacactcgggtcaactgattc	228874	616008	see also 8548 line	-	-
8550	FLJ13855	NM_023079.2	486	cccccctctgtctcaactctgac	228875	616009	see also 8548 line	-	-
8551	FLJ13855	NM_023079.2	491	ctctgtctcaactctgacacagc	228876	616010	see also 8548 line	-	-
8552	CAPN10	NM_023083.1	1232	caggagctctccggagacacagc	187560	591345	-	-	diabetes mellitus(糖尿病), diabetes(糖尿病)
8553	NS37P2	NM_023097.1	1424	actctacagctctacatgagaa	385430	722953	-	-	-
8554	RNFZ	NM_023929.2	2956	tgcctctatctgctctgctgagc	135257	797645	-	-	-
8555	EBF	NM_024007.2	1031	tcggaagcgaagccctctctatct	25693	459869	transcription_regulat	-	-
8556	EBF	NM_024007.2	2015	aaacagctctcaagcagatctctgc	25696	459882	see also 8555 line	-	-
8557	HOXB4	NM_024015.2	496	taccctctggtctgcgaagtctca	5120	444754	transcription_regulat	-	-
8558	HOXB9	NM_024017.3	97	ctggagcgtctgacgactattat	5135	444770	transcription_regulat	-	-
8559	HOXB9	NM_024017.3	98	tggagcgtctgacgactattatg	5136	444771	see also 8558 line	-	-
8560	HOXB9	NM_024017.3	150	gagcgcctctcagccaagtctcc	5138	444773	see also 8558 line	-	-
8561	HOXB9	NM_024017.3	478	aggctcagccgcgcagacttgc	5140	444774	see also 8558 line	-	-
8562	HOXB9	NM_024017.3	479	ggagcagccgcgcagacttgc	5141	444775	see also 8558 line	-	-
8563	HOXB9	NM_024017.3	544	cgcgtctacggagcactataaatt	5150	444778	see also 8558 line	-	-
8564	HOXB9	NM_024017.3	545	cgcgtctacggagcactataaatt	5151	444780	see also 8558 line	-	-
8565	HOXB9	NM_024017.3	546	ggcgtctacggagcactataaattg	5152	444781	see also 8558 line	-	-
8566	GDAP1L1	NM_024034.3	1118	ctggagaggtctggagactcttgc	395538	754743	-	-	-
8567	MGC2903	NM_024038.2	433	acctcttaagccgggactatctgc	395579	727130	-	-	-
8568	MGC2903	NM_024038.2	434	acctcttaagccgggactatctgc	395579	727131	see also 8567 line	-	-
8569	MGC2903	NM_024038.2	473	acctcttaagccgggactatctgc	395583	727132	see also 8567 line	-	-
8570	DDX50	NM_024045.1	566	ggatgagaggggtatctatctct	59384	463314	-	-	-
8571	DDX50	NM_024045.1	568	ggatgagaggggtatctatctct	59385	463315	see also 8570 line	-	-
8572	DDX50	NM_024045.1	569	tgcggaggggtatctatctcttc	59386	463316	see also 8570 line	-	-
8573	DDX50	NM_024045.1	578	aaactatctctctctctctctcag	59387	463317	see also 8570 line	-	-

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8574	DD560	NM 024045.1	838	atgtgagcaactcattcaaac	59392	483324	see also 8570 line
8575	DD560	NM 024045.1	1100	aggagcaactcattcctcaaac	59405	483364	see also 8570 line
8576	DD560	NM 024045.1	1321	aggcttgagcaactcattcctcaaac	59407	483341	see also 8570 line
8577	DD560	NM 024045.1	2070	ctctctgagcaactcattcctcaaac	59423	483365	see also 8570 line
8578	MG38407	NM 024046.2	017	cgctcttgagcaactcattcctcaaac	91441	459585	Knase's related
8579	MG30348	NM 024052.3	844	ctctcttgagcaactcattcctcaaac	385647	171869	-
8580	Nu37	NM 024057.2	626	tggcaaacctcgtttttatgac	269534	851991	-
8581	C7c426	NM 024067.2	182	cgcagcccaagactgaattcc	385712	778072	-
8582	ALG8	NM 024079.2	211	tgttatatgagcaactcattca	213199	815897	transferase, transferring
8583	ALG8	NM 024079.2	846	tccgcactcttcttctcaaga	213224	815917	see also 8582 line
8584	ALG8	NM 024079.2	848	cgcgactcttcttctcaagaagg	213225	815918	see also 8582 line
8585	ALG8	NM 024079.2	903	ctggctcttcttctcaagaattg	213226	815919	see also 8582 line
8586	TRPM8	NM 024080.3	1730	ctctcttgagcaactcattca	252242	638329	receptor activity
8587	MGC3329	NM 024086.2	435	ctctcagagagaaattgacaaag	365814	722455	-
8588	ELOVL6	NM 024090.1	842	tccagagcttcgaagaaattgc	326448	603722	-
8589	MGC5509	NM 024093.1	606	tgtccctcttgagaaacttgc	385970	748436	-
8590	MAPKAP1	NM 024111.2	312	tgcgaactcactcttctcttc	297377	795268	-
8591	MAPKAP1	NM 024111.2	315	gcgaactcactcttctcttc	297378	795269	see also 8590 line
8592	MAPKAP1	NM 024111.2	327	atcctcttgactctctcttc	297379	795271	see also 8590 line
8593	MAPKAP1	NM 024111.2	378	atcctcttgactctctcttc	297380	795272	see also 8590 line
8594	MAPKAP1	NM 024111.2	349	agcttgagcaactcattcaagt	297388	795280	see also 8590 line
8595	MAPKAP1	NM 024111.2	363	cgctctcactctctctctctg	297400	795291	see also 8590 line
8596	MAPKAP1	NM 024111.2	1324	tgtctgagcaactcattcaagt	297410	795306	see also 8590 line
8597	MAPKAP1	NM 024111.2	1335	cacattcagcaactcattcaagt	297411	795308	see also 8590 line
8598	MAPKAP1	NM 024111.2	1422	gcgcttgagcaactcattcaagt	297414	795310	see also 8590 line
8599	MAPKAP1	NM 024111.2	1428	gcctcttgagcaactcattcaagt	297416	795311	see also 8590 line
8600	MAPKAP1	NM 024111.2	1443	cgagagagcaactcattcaagt	297417	795312	see also 8590 line
8601	MAPKAP1	NM 024111.2	1454	cactaagctttgttgagcaactc	297420	795314	see also 8590 line
8602	MAPKAP1	NM 024111.2	1627	tgtctgagcaactcattcaagt	297427	795320	see also 8590 line
8603	C20orf7	NM 024120.2	587	tggagcgacacactctctgaac	386120	728083	-
8604	C20orf7	NM 024120.2	590	aggcgacacactctctgaac	386121	728084	-
8605	MGC3067	NM 024295.3	649	agttatctcttgagcaactc	386193	714815	see also 8603 line
8606	MGC3067	NM 024295.3	779	atccacactcagttttctgaac	386201	714816	see also 8603 line
8607	MMP28	NM 024302.2	618	accacaaatgagcaactcattca	156404	558919	-
8608	PLEKHFI	NM 024310.2	814	tgcgagcaactcattcaagt	158104	554874	-
8609	ET	NM 024311.2	333	tgcgaactctgagcaactcattca	279758	801965	-
8610	ET	NM 024311.2	355	ctgctccttgagcaactcattca	279759	801967	see also 8609 line
8611	C20orf121	NM 024331.2	770	tccctcttgagcaactcattca	273306	655465	-
8612	MGC3222	NM 024334.1	634	accgaactctgagcaactcattca	386307	735910	-
8613	MGC10765	NM 024345.1	444	ctgagagcaactcattcaagt	386356	768587	Knase's related
8614	MGC10765	NM 024345.1	561	tccgtctctgagcaactcattca	386357	768572	see also 8613 line
8615	MGC10765	NM 024345.1	562	cgctctctgagcaactcattca	386358	768573	see also 8613 line

8616	MGCL165	NM.024345.1	565	ttctctctactctctactatgatg	386359	768574	see also 8613 line	receptor activity, transcription regulat or, apoptosis, cell cycle,	translation regulator	lysophospholipase plasma membrane cation-transporting ATPase
8617	NOTCH2	NM.024408.2	1902	atcaccgcgaatgctctgaatg	149157	538121	see also 8620 line			
8618	PLA2G4A	NM.024420.1	1785	caaggctgcctcaattcaactgc	199522	578934	see also 8620 line			
8619	ATP10A	NM.024490.2	1034	gtctctctacgagacatgaac	72363	494062	see also 8620 line			
8620	HIVEP3	NM.024503.1	5198	gcttgaactcactctgaacac	4890	701419	see also 8620 line			
8621	HIVEP3	NM.024503.1	5698	atgctcattgtgctattcaac	4895	701426	see also 8620 line			
8622	HIVEP3	NM.024503.1	5703	tggtctctattcaactcactta	4898	701427	see also 8620 line			
8623	HIVEP3	NM.024503.1	5767	tgactgtctgtctcaactattt	4900	701428	see also 8620 line			
8624	HIVEP3	NM.024503.1	5775	tgctgtgaataatgttgcaacac	4901	701432	see also 8620 line			
8625	GCC1	NM.024525.5	2138	tcagagaccacacactcaaac	321449	686101	see also 8625 line			
8626	GCC1	NM.024525.5	2140	tcagagaccacacactcaaac	321450	686102	see also 8625 line			
8627	Clorf28	NM.024526.3	185	tgagctctctgcagctacacac	386716	759027	see also 8627 line			
8628	Clorf28	NM.024526.3	325	aaagctctcaacactgtctctac	386719	759032	see also 8627 line			
8629	Clorf28	NM.024526.3	445	aaagctctctgtctctctctact	386722	759042	see also 8627 line			
8630	Clorf28	NM.024526.3	600	ggctctctctctctctctctctaa	386730	759047	see also 8627 line			
8631	Clorf28	NM.024526.3	602	ggctctctctctctctctctctaa	386731	759048	see also 8627 line			
8632	Clorf28	NM.024526.3	604	ggctctctctctctctctctctaa	386732	759049	see also 8627 line			
8633	Clorf28	NM.024526.3	789	ggctctctctctctctctctctaa	386741	759054	see also 8627 line			
8634	RNP128	NM.024535.3	1169	ccgctctctctctctctctctctaa	191959	585141	see also 8637 line			
8635	FLJ13114	NM.024541.1	302	ccctctctctctctctctctctaa	386925	812533	see also 8637 line			
8636	SAP130	NM.024545.2	2881	caagtcgctctctctctctctctaa	387000	781083	see also 8637 line			
8637	Cl3orf7	NM.024546.2	1712	caacagcaagcgctctctctaa	387057	721083	see also 8637 line			
8638	Cl3orf7	NM.024546.2	1714	caacagcaagcgctctctctaa	387058	721084	see also 8637 line			
8639	Cl3orf7	NM.024546.2	1722	ggctctctctctctctctctctaa	387059	721085	see also 8637 line			
8640	FLJ23047	NM.024546.2	1090	aacagctctctctctctctctctaa	387106	584299	see also 8641 line			
8641	FLJ20087	NM.024553.2	462	caagctctctctctctctctctaa	387181	715166	see also 8641 line			
8642	FLJ20087	NM.024553.2	563	tgcaagaagaagctctctctctaa	387187	715169	see also 8641 line			
8643	FLJ21963	NM.024560.2	468	ggagataagctctctctctctaa	236350	813907	see also 8641 line			
8644	FLJ22054	NM.024561.3	1801	atgctctctctctctctctctctaa	387282	719471	see also 8641 line			
8645	FLJ21616	NM.024567.1	161	hcttgcacacacacacacacac	3764	443785	see also 8645 line			
8646	FLJ21616	NM.024567.1	370	hcttgcacacacacacacacac	3768	443790	see also 8645 line			
8647	FLJ21618	NM.024567.1	805	aagctctctctctctctctctctaa	3774	443801	see also 8645 line			
8648	FLJ13119	NM.024580.3	593	taactctctctctctctctctctaa	57438	471759	see also 8649 line			
8649	OSBP.L9	NM.024586.3	862	taagccacagctctctctctctaa	303784	672408	see also 8649 line			
8650	OSBP.L9	NM.024586.3	864	caagccacagctctctctctctaa	303785	672409	see also 8649 line			
8651	OSBP.L9	NM.024586.3	938	tcacacacagctctctctctctaa	303788	672413	see also 8649 line			
8652	OSBP.L9	NM.024586.3	939	tcacacacagctctctctctctaa	303789	672414	see also 8649 line			

8653	OSPL9	NM_024586.3	1125	agagacacaaacattactat	303797	672421	see also 8649 line
8654	OSPL9	NM_024586.3	1187	aaagattacttcaagatttat	303801	672426	see also 8649 line
8655	OSPL9	NM_024586.3	1308	tactttagttttgaattgac	303806	672434	see also 8649 line
8656	FLJ2366	NM_024589.1	354	gcgaagtgacacatctatgac	387616	746972	-
8657	PANK3	NM_024594.2	566	ccgcagacgtctctctcttctatc	95638	511221	-
8658	PANK3	NM_024594.2	895	tgctatctcaagacacatacag	95649	511230	see also 8657 line
8659	FLJ1388	NM_024603.1	879	cggattctcaggacactcag	387744	723420	-
8660	FLJ1388	NM_024603.1	906	aagcaaatctctctctctatcc	387745	723422	see also 8659 line
8661	FLJ1388	NM_024603.1	907	agcaaatcagctctctatcacc	387746	723423	see also 8659 line
8662	FLJ1388	NM_024603.1	937	tgcctctgcagtgacaatata	387747	723424	see also 8659 line
8663	FLJ1388	NM_024603.1	988	aagcggagatttgatttgtag	387749	723426	see also 8659 line
8664	FLJ1308	NM_024604.1	197	gaataattcctctattctgaaa	387757	608373	-
8665	FLJ20896	NM_024605.2	478	agctctcatgacctatgattac	387802	532191	-
8666	FLJ20896	NM_024605.2	478	gctctcatgacctatgattac	387803	532192	see also 8665 line
8667	HSPBAP1	NM_024610.3	644	gtcatctgacctatgattgt	387845	785532	-
8668	FLJ21308	NM_024615.2	2329	agcatatgatttgattctcag	388040	728750	-
8669	FLJ21308	NM_024615.2	2374	acgtttgttgctctatgaaca	388116	734309	-
8670	FLJ12604	NM_024621.1	2795	tagaagaatgaacctatcttct	388123	734320	see also 8669 line
8671	SMC6.1	NM_024624.2	1212	atgcacagcaaccacaaattatg	100856	515003	-
8672	ZDHHC14	NM_024630.2	1580	gtgctatcagagcaacaattgc	388289	759975	-
8673	FLJ23342	NM_024631.1	1514	agccattgataacctctaaat	388323	761347	-
8674	FLJ23342	NM_024631.1	1515	gcctattgataacctctaaat	388324	761348	see also 8673 line
8675	GALNT12	NM_024642.2	454	ctctctgaacctctcttctgt	218714	777581	-
8676	FLJ4er169	NM_024644.1	1418	gcctctgaacctctcttctgt	388487	713888	-
8677	FLJ13842	NM_024645.1	543	tgctctgctctctctctctctaa	51078	478931	-
8678	FLJ13842	NM_024645.1	547	tgctctgctctctctctctctaa	51081	478932	see also 8677 line
8679	FLJ22329	NM_024656.2	546	tgctctgctctctctctctctaa	303177	671492	-
8680	FLJ22329	NM_024656.2	1322	acctcgttttgacctctctc	303182	671499	see also 8679 line
8681	ZWCC2	NM_024657.2	378	gagctcgtctctctctctctctg	388609	499501	-
8682	ZWCC2	NM_024657.2	564	aggagtaattgtaattgtaattg	388620	499507	see also 8681 line
8683	ZWCC2	NM_024657.2	573	tgagctcattgtaattgtaattc	388622	499508	see also 8681 line
8684	ZWCC2	NM_024657.2	577	ctctattgtaattcctctctctaa	388623	499509	see also 8681 line
8685	ZWCC2	NM_024657.2	603	tgctcaacaacaagaactctga	388624	499511	see also 8681 line
8686	ZWCC2	NM_024657.2	604	tgctcaacaacaagaactctga	388625	499512	see also 8681 line
8687	IP04	NM_024658.2	1429	acctctcctctcggactctgag	146765	651281	-
8688	IP04	NM_024658.2	1429	acctctcctctcggactctgag	146765	651281	see also 8687 line
8689	FLJ11753	NM_024659.2	1350	caagctctcaatgtaattcag	388697	777129	-
8690	FLJ10774	NM_024662.1	1739	tagaataacctctcttctctacc	82671	602267	molecular_function
8691	FLJ10774	NM_024662.1	2892	aaccgatactctctctctctacc	82683	602268	see also 8690 line
8692	FLJ10774	NM_024662.1	2894	cagatatactctctctctctctg	82684	602267	see also 8690 line
8693	IP41	NM_024665.2	243	agagataacctctctctctgact	388734	742466	-
8694	IP41	NM_024665.2	913	atctcagattcgtctctctctgag	388755	742468	see also 8693 line

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	SUV39H2	NM_024670.3	767	tcccaatgaggtctacacaaga	19145	451350	transcription_regulat or
8695	FLJ11103	NM_024669.1	236	tccctgcgttggaatcgaact	389307	786701	-
8696	FLJ121069	NM_024692.3	2235	ttgttgcacagtcatttatccacc	389374	741752	-
8697	ZFH4	NM_024721.2	201	acgttgtgagcgaaataaacg	13391	442102	-
8698	ZFH4	NM_024721.2	638	ttcatctctctggaaacatttta	13391	442114	see also 8698 line
8699	ZFH4	NM_024721.2	675	ttccaacactctcacgatcagg	13393	442115	see also 8698 line
8700	ZFH4	NM_024721.2	704	ttgttcagtcttgcaaatgttgc	13394	442118	see also 8698 line
8701	ZFH4	NM_024721.2	714	ttgcacagttcttcgtctcta	13395	442117	see also 8698 line
8702	ZFH4	NM_024721.2	992	attgcctctccgcataataacag	14004	442120	see also 8698 line
8703	ZFH4	NM_024721.2	1114	atccacacctctccgcataataacag	14008	442123	see also 8698 line
8704	ZFH4	NM_024721.2	1133	atgacagctctttcattcttaaaa	14010	442125	see also 8698 line
8705	ZFH4	NM_024721.2	1134	ttgacagctctctctctcttaaaa	14010	442126	see also 8698 line
8706	ZFH4	NM_024721.2	1288	tgcgtgcaccccactctctctct	14013	442123	see also 8698 line
8707	ZFH4	NM_024721.2	1288	tccgtgtgttggtttgtaaacac	14038	442148	see also 8698 line
8708	ZFH4	NM_024721.2	2140	tccgtgtgttggtttgtaaacac	14048	442150	see also 8698 line
8709	ZFH4	NM_024721.2	2632	tccgtgtgtgtgtctctctctac	14048	442150	see also 8698 line
8710	ZFH4	NM_024721.2	2988	accacacacacacacacacac	14059	442159	see also 8698 line
8711	ZFH4	NM_024721.2	4210	tccgtctacatctcagatcttaaaa	14087	442179	see also 8698 line
8712	ZFH4	NM_024721.2	4481	aagctgcacatctctctcttaaaa	14093	442181	see also 8698 line
8713	ZFH4	NM_024721.2	4663	gcagctgcacatctctctcttaaaa	14094	442183	see also 8698 line
8714	ZFH4	NM_024721.2	6872	cacacagcattctgaccttgatta	14154	442238	see also 8698 line
8715	ZFH4	NM_024721.2	8038	cacacagcattctgaccttgatta	14177	442233	see also 8698 line
8716	ZFH4	NM_024721.2	10467	gaotcctgcgtctctctctctct	14240	442336	see also 8698 line
8717	C7orf10	NM_024728.1	1136	atccacacctctctctctctct	304744	672801	-
8718	DIBD1	NM_024740.1	977	ttgtgtgcctctctctctctct	389793	749528	-
8719	DIBD1	NM_024740.1	1523	ttgtgtgcctctctctctctct	389807	749540	see also 8718 line
8720	DIBD1	NM_024740.1	1524	ttgtgtgcctctctctctctct	389808	749541	see also 8718 line
8721	FLJ13063	NM_024742.1	997	cccttctgtgcctctctctct	131301	532659	-
8722	FLJ13063	NM_024742.1	1345	ctctgtctgtgcacgaatctctg	131302	532661	see also 8721 line
8723	ALZSOR8	NM_024744.1	1355	taccgttgctgtgcacgaatctctg	219205	442468	-
8724	ALZSOR8	NM_024744.1	2124	tccatgcgtgtgcacgaatctctg	219224	442491	see also 8723 line
8725	SCHBP1	NM_024745.2	255	gcagctctgcagcctctctctct	389821	528994	-
8726	SCHBP1	NM_024745.2	261	cagacgtctctctctctctctct	389822	528995	see also 8725 line
8727	SCHBP1	NM_024745.2	263	gcagcctctctctctctctctct	389823	528998	see also 8725 line
8728	SCHBP1	NM_024745.2	361	gcagcctctctctctctctctct	389825	528998	see also 8725 line
8729	SCHBP1	NM_024745.2	363	gcagcctctctctctctctctct	389826	529000	see also 8725 line
8730	SCHBP1	NM_024745.2	365	gcagcctctctctctctctctct	389827	529000	see also 8725 line
8731	SCHBP1	NM_024745.2	746	ttgtgtgcacacacacacac	389834	529004	see also 8725 line
8732	FLJ13213	NM_024755.1	529	ttgtgtgcacacacacacac	26359	454071	-
8733	FLJ13213	NM_024755.1	601	ttgtgtgcacacacacacac	26359	454074	see also 8732 line
8734	FLJ13213	NM_024755.1	620	aagcagcagcagcagcagcagc	26861	454075	see also 8732 line
8735	FLJ13213	NM_024755.1	621	aagcagcagcagcagcagcagc	26862	454076	see also 8732 line
8736	FLJ13213	NM_024755.1	778	atccctctctctctctctctct	26968	454079	see also 8732 line
8737	FLJ13213	NM_024755.1	779	ttcctctctgacagagataaaa	26969	454080	see also 8732 line

8738	FLJ13213	NM_024755.1	765	ctgaacacagataaataatgt	26570	454081	see also 8732 line	-
8739	FLJ13955	NM_024758.1	762	cagcagaacatgcaagcttacc	390146	755597	-	-
8740	FLJ13955	NM_024759.1	763	agcagaacatgcaagcttacc	390147	755598	see also 8739 line	-
8741	FLJ14076	NM_024764.1	1407	ttcaaacatgctgctgaatttgc	390284	782482	-	-
8742	PIPK2C	NM_024779.3	618	ttgtgtatgcacatgttttgc	207671	597708	kinase related	-
8743	PIPK2C	NM_024779.3	697	agccacacatagagaagaattga	207673	597712	see also 8742 line	-
8744	TM05	NM_024780.3	2252	caacctctttatgataatcatca	390618	737183	-	-
8745	TM05	NM_024780.3	2262	gttctaatcatcatcatcttcta	390619	737185	see also 8744 line	-
8746	ZBTB3	NM_024784.2	1632	caatctccacagctcacaaatga	43878	531326	transcription regulat	-
8747	RNF122	NM_024787.2	418	ttgtgtacccgtgtttctcttgc	390663	785695	or	-
8748	FLJ2624	NM_024808.2	144	atgcacaataaccagaacactcc	390837	787250	-	-
8749	FLJ2624	NM_024808.2	374	tctcgaatgatgataaagtgtgc	390845	787260	see also 8748 line	-
8750	FLJ12529	NM_024811.2	184	ttcaacaatacagctcagatgta	61334	479838	-	-
8751	FLJ12529	NM_024811.2	290	aaacacacgaaccctccactct	61335	479839	see also 8750 line	-
8752	FLJ12529	NM_024811.2	296	saagccctctgaattctctatcac	61336	479840	see also 8750 line	-
8753	FLJ12529	NM_024811.2	638	gtccaagaaggagaaactctcc	61342	479855	see also 8750 line	-
8754	FLJ12529	NM_024811.2	730	ctcatctgtctgtgtatgaatgc	61344	479860	see also 8750 line	-
8755	FLJ12529	NM_024811.2	1008	ttgactctctccagacatactaac	61347	479862	see also 8750 line	-
8756	FLJ12529	NM_024811.2	1125	agcaacaacacgaattccagac	61350	479866	see also 8750 line	-
8757	CBLL1	NM_024814.1	578	atctcaactctgcacatctgagac	391022	750457	-	-
8758	CBLL1	NM_024814.1	848	atctgtctgcacatctgcacatct	391025	750472	see also 8757 line	-
8759	CBLL1	NM_024814.1	849	tctgtctgcacatctgcacatct	391026	750473	see also 8757 line	-
8760	CBLL1	NM_024814.1	854	caatctgaacacactctgatttt	391027	750474	see also 8757 line	-
8761	CBLL1	NM_024814.1	858	caatctgaacacactctgatttt	391028	750476	see also 8757 line	-
8762	CBLL1	NM_024814.1	1109	agctactctactctgtttatata	391029	750482	see also 8757 line	-
8763	CBLL1	NM_024814.1	1199	ttgcacagatgcacactctataga	391032	750485	see also 8757 line	-
8764	UBE1DC1	NM_024818.2	485	agctgatgtgaactctgaatgac	220948	607948	-	-
8765	KIAA1608	NM_024820.1	471	ttcggtttctgcactctattctca	391078	760452	-	-
8766	KIAA1608	NM_024820.1	472	ttcggtttctgcactctattctca	391079	760453	see also 8765 line	-
8767	KIAA1608	NM_024820.1	474	ttgctttgcctgtattctctcagg	391080	760454	see also 8765 line	-
8768	KIAA1608	NM_024820.1	954	tactctatggaatctcaattgaag	391091	760466	see also 8765 line	-
8769	KIAA1608	NM_024820.1	955	acctctatggaatctcaattgaag	391092	760467	see also 8765 line	-
8770	KIAA1608	NM_024820.1	1528	atctatcaaaaatgggaataaaa	391106	760482	see also 8765 line	-
8771	RIN3	NM_024832.3	2614	atgaggtttctactactcttccac	297443	665923	-	-
8772	L2K1	NM_024835.1	466	atgtcaatgtgtctcaacaactaat	391299	691027	-	-
8773	L2K1	NM_024835.1	492	atgtatgatctatctcaaaaag	391300	691028	see also 8772 line	-
8774	L2K1	NM_024835.1	499	atgtatctcaaaaatctcaaaaag	391301	691030	see also 8772 line	-
8775	L2K1	NM_024835.1	666	caatttttcaatctgtctcaaaa	391306	691045	see also 8772 line	-
8776	L2K1	NM_024835.1	1391	agcttctctatctctcaaaaag	391324	691062	see also 8772 line	-
8777	L2K1	NM_024835.1	1832	acctgtgtctctatctctcaaaa	391337	691073	see also 8772 line	-
8778	L2K1	NM_024835.1	1910	agcttctctatctctcaaaaag	391359	691074	see also 8772 line	-
8779	L2K1	NM_024835.1	2118	ttgcacacagctgtctgtctgaac	391348	691084	see also 8772 line	-
8780	FLJ22002	NM_024838.3	1316	caagtatgtctctatcttttttc	83198	495928	kinase related	-

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8781	FLJ14154	NM 024845.1	219	gaatcaacgaacatcatatgat	215146	602203	-	-	-
8782	FLJ14154	NM 024845.1	635	cacatcttctcaacaaacag	215153	602214	see also 8781 line	-	-
8783	TM67	NM 024841.2	358	tcggaaactagagcccttaag	391368	714265	-	-	-
8784	EIF7C3	NM 024852.2	493	gaacagccatggccgctttttg	391434	769112	-	-	-
8785	EIF7C3	NM 024852.2	497	tgacatgacagccctttttg	391435	769113	see also 8784 line	-	-
8786	EIF7C3	NM 024852.2	601	tgacagatgcgcttccttcagc	391438	769115	see also 8784 line	-	-
8787	EIF7C3	NM 024852.2	1377	ccagatgcagagcgaagaaagc	391458	769136	see also 8784 line	-	-
8788	EIF7C3	NM 024852.2	2346	aaactatcaacatcgaataaac	391487	769155	see also 8784 line	-	-
8789	EIF7C3	NM 024852.2	2539	tcgctctcaacatcatttttt	391489	769161	see also 8784 line	-	-
8790	EIF7C3	NM 024852.2	2542	tcctctcaacatcatttttt	391500	769163	see also 8784 line	-	-
8791	EIF7C3	NM 024852.2	2785	tcgcacagcttcacagatcttc	391508	769168	see also 8784 line	-	-
8792	EIF7C3	NM 024852.2	2812	taactctcaacatcattcttc	391510	769169	see also 8784 line	-	-
8793	FLJ12785	NM 024855.2	644	aaactcgaacgcctcaactcttc	287320	659228	-	-	-
8794	FLJ13962	NM 024855.2	644	tgagatccatttcgacatcttc	391547	750915	-	-	-
8795	FLJ13962	NM 024862.1	543	tgagatccatttcgacatcttc	391549	750917	see also 8794 line	-	-
8796	FLJ13962	NM 024862.1	581	tcgggaatttcgtaactgaat	391551	750919	see also 8794 line	-	-
8797	FLJ13962	NM 024862.1	582	tcgggaatttcgtaactgaat	391551	750919	see also 8794 line	-	-
8798	FLJ13962	NM 024862.1	583	tcgcacacccatcaactgaat	395030	750945	see also 8794 line	-	-
8799	PKD1-like	NM 024874.3	1817	atgcacatccacatctgaatg	150892	544287	-	-	-
8800	SYNP02L	NM 024875.1	252	gcgcgcagacgaagaactaac	391611	679696	-	-	-
8801	DHDDS	NM 024887.1	187	acgcttcctatgcacgaacttc	218587	606523	-	-	-
8802	DHDDS	NM 024887.1	966	aaagcaacgcttcgaacacttc	391989	724833	see also 8801 line	-	-
8803	G6orf34	NM 024900.1	535	caagcttcacagctgaacact	392000	725063	-	-	-
8804	FLJ123091	NM 024911.3	1128	atccgcaagccctctctatgc	180575	604254	-	-	-
8805	FLJ12687	NM 024911.4	2219	agcttaccctctgctttgttc	180576	604255	see also 8805 line	-	-
8806	FLJ12687	NM 024911.4	2220	agcttaccctctgctttgttc	392213	707579	-	-	-
8807	FLJ2571	NM 024923.2	844	tcgttggaactctcaactaac	392213	707579	-	-	-
8808	FLJ12571	NM 024926.1	468	tcgttcacagcttaactaac	392272	770956	see also 8808 line	-	-
8809	FLJ12571	NM 024926.1	470	tcgttcacagcttaactaac	61738	768504	-	-	-
8810	FLJ22559	NM 024928.3	239	tcctgccttcgcaaacacttc	61681	480652	-	-	-
8811	FLJ12918	NM 024939.1	225	ctcgcgcagcagcacttaacttc	61688	480655	see also 8811 line	-	-
8812	FLJ12918	NM 024939.1	1360	atgcctgggaatgcatacatg	392366	719853	-	-	-
8813	FLJ13611	NM 024941.1	528	aaactatcgttcgaataacaa	392367	719853	-	-	-
8814	PHO3	NM 024947.2	2469	caactatcgttcgaatcgaag	392542	769556	see also 8814 line	-	-
8815	PHO3	NM 024947.2	2562	tccttagcagcttcgaactaac	145244	542829	-	-	-
8816	FLJ13397	NM 024948.1	305	ctgcagcaagctttcttttta	145249	542849	see also 8816 line	-	-
8817	FLJ13397	NM 024948.1	1020	aaagttgctctctctgaatgc	145271	542850	see also 8816 line	-	-
8818	FLJ13397	NM 024948.1	1087	cgcgtatcttttcgaagatg	145272	542851	see also 8816 line	-	-
8819	FLJ13397	NM 024948.1	1097	tcgcagatgccttccttaattg	145283	542858	see also 8816 line	-	-
8820	FLJ13397	NM 024948.1	1379	tcgattgaagatgcataatttc	145287	542863	see also 8816 line	-	-
8821	FLJ13397	NM 024948.1	1499	aaacaaatgcacataactg	392598	719825	-	-	-
8822	FLJ13089	NM 024853.2	66	cgcgccttcacataactg	392599	719826	see also 8822 line	-	-
8823	FLJ13089	NM 024853.2	68	aaactatcgaatcttcttga	392629	719848	see also 8822 line	-	-
8824	FLJ13089	NM 024853.2	813	tcctatcgcattcttctgcttc	392629	719848	see also 8822 line	-	-

8825	FLJ23376	NM_024956.2	1172	ttatctacgctcttactctt	392721	595256	-	-	-
8826	PANK2	NM_024960.3	405	cgagttcttccacagatga	35505	769591	kinase related	-	-
8827	PANK2	NM_024960.3	502	atgagagctccacagctctat	35506	769595	see also 8826 line	-	-
8828	PANK2	NM_024960.3	503	ttgagctgacagcagctact	35507	769598	see also 8828 line	-	-
8829	TAIP-2	NM_024989.2	457	ttgagcagcagcagctactca	31181	769388	apoptosis	-	-
8830	IFGI	NM_024995.3	789	ttgagcctctgctcagatgttc	37261	477524	-	-	-
8831	IFGI	NM_024995.3	1451	tcctgtcattcctatcagatga	37289	477539	see also 8830 line	-	-
8832	ADAMT12	NM_025003.2	1795	agagataaactctgcactatga	392946	798234	-	-	-
8833	ADAMT12	NM_025003.2	2458	gctgtgtgtgtgtgtaattata	392968	798262	see also 8832 line	-	-
8834	ADAMT12	NM_025003.2	2483	ggtgtgtgtgtgtgttaatacc	392969	798262	see also 8832 line	-	-
8835	VCP135	NM_025054.3	814	cgaaactctctgtttctctg	393262	783880	signal transduction	-	-
8836	VCP135	NM_025054.3	1052	aggtgagagacattatcaatga	393266	783888	see also 8835 line	-	-
8837	VCP135	NM_025054.3	1860	actatacactgttaattgtgic	393292	783919	see also 8835 line	-	-
8838	VCP135	NM_025054.3	1931	ttgtgttgagacagaactaact	393295	783921	see also 8835 line	-	-
8839	VCP135	NM_025054.3	2887	tcctgttaactctgctactaaag	393322	783946	see also 8835 line	-	-
8840	RPFI	NM_025065.5	676	agacatgttctctctgttaag	393452	729126	-	-	-
8841	RPFI	NM_025065.5	677	agcagttctctctctgttaag	393453	729127	see also 8840 line	-	-
8842	RPFI	NM_025065.5	679	cagttctctctctctgttaag	393454	729128	see also 8840 line	-	-
8843	FRAS1	NM_025074.2	1053	atcctttcaagaagactgatt	146282	649127	-	-	-
8844	FRAS1	NM_025074.2	1562	tgagttgattctgttatgttg	146391	649244	see also 8843 line	-	-
8845	FRAS1	NM_025074.2	1563	ggattttactctgttatgttg	146392	649245	see also 8843 line	-	-
8846	FRAS1	NM_025074.2	1849	agttgttctgagcaactgttc	146393	649247	see also 8843 line	-	-
8847	FRAS1	NM_025074.2	8143	ttctacacactctcaactctgc	146402	649253	see also 8843 line	-	-
8848	FRAS1	NM_025074.2	10642	agagccctctccaaattctagc	146465	649268	see also 8843 line	-	-
8849	NF3L1BP	NM_025075.1	51	cagtgctgacagcagactatga	393492	716315	-	-	-
8850	NF3L1BP	NM_025075.1	53	tgagtgagcagcagactatga	393493	716318	see also 8849 line	-	-
8851	NF3L1BP	NM_025075.1	249	tgatctatgagcagactctaga	393497	716323	see also 8849 line	-	-
8852	NF3L1BP	NM_025075.1	556	tgatctatctcagactctcagc	393504	716333	see also 8849 line	-	-
8853	TBDN100	NM_025085.2	740	agctctgtcttaccattatta	219052	602466	transcription_regulat	-	-
8854	TBDN100	NM_025085.2	741	ttctattcttccactctatttag	219053	602467	or	-	-
8855	TBDN100	NM_025085.2	907	ttgaaacattctgttaccattga	219060	602473	see also 8853 line	-	-
8856	TBDN100	NM_025085.2	1874	tgactatcattgttgccttttaa	219090	602500	see also 8853 line	-	-
8857	TBDN100	NM_025085.2	2011	aaactgtatccagaactctgtct	219098	602509	see also 8853 line	-	-
8858	TBDN100	NM_025085.2	2561	cagattatcagcttccaaatgag	219112	602529	see also 8853 line	-	-
8859	FLJ21511	NM_025087.1	1204	gaagtgttctacgttagagaaga	393536	757362	-	-	-
8860	FLJ21108	NM_025097.1	1263	cagttgttccagcctctattata	393603	726223	-	-	-
8861	CDCD2	NM_025103.1	975	tgagttctccatcgatcaaatg	393641	723926	-	-	-
8862	CDCD2	NM_025103.1	979	gtccctatcgatcaaatgattg	393642	723927	see also 8861 line	-	-
8863	CDCD2	NM_025103.1	980	tcctatctgcttcaaatgattg	393643	723928	see also 8861 line	-	-
8864	FLJ22665	NM_025105.3	2171	ctgtatctactgcagaacacatc	83299	487968	-	-	-
8865	FLJ22663	NM_025115.1	1538	caggttggatctgctcaactgctc	393791	755105	-	-	-
8866	RNF34	NM_025126.2	150	ctgtgagctcttcatatgattga	265177	466372	-	-	-
8867	PWDMP	NM_025132.2	846	ttgagcaactgctctctatatt	393844	798938	-	-	-

Alzheimer disease(アルツハイマー病)

8868	FLJ12584	NM_025130.2	1052	ttgagagatgaacctgaagac	393838	729722	-	-	-
8869	FLJ12584	NM_025130.2	1052	acctgttgagacctctctgtg	393839	729723	see also 8868 line	-	-
8870	FLJ12584	NM_025130.2	1241	aaatggcagcagctctgaagc	393841	729725	see also 8868 line	-	-
8871	MA33P	NM_025146.1	421	tgagcttgagcagcagcgaact	215160	602427	-	-	-
8872	RUP11	NM_025156.2	1013	caagctgacagcagcagcgaact	135944	540160	-	-	-
8873	FLJ13386	NM_025160.2	1703	caagcagctgacagcagctctg	394732	812833	-	-	-
8874	FLJ11960	NM_025182.2	859	tgacacacttgacagcagctg	394789	717969	-	-	-
8875	Lin10	NM_025187.3	649	taacccatgagcagcagctgaac	281309	757727	-	-	-
8876	Lin10	NM_025187.3	974	tactctccctgacagcagctg	281319	757735	see also 8875 line	-	-
8877	EP01	NM_025209.2	353	tgacgaataagcagcagctgaac	275827	729675	transcription_regulat	-	-
8878	EP01	NM_025209.2	428	atcatcttcagcagcagctattica	275829	696362	see also 8877 line	-	-
8879	EP01	NM_025209.2	1568	taaggagatgctgatatgatatc	275804	696366	see also 8877 line	-	-
8880	EP01	NM_025209.2	1569	aggagatgctgatatgatatc	275865	696387	see also 8877 line	-	-
8881	EP01	NM_025209.2	2594	gacatatactagcagcttaagt	275900	696407	see also 8877 line	-	-
8882	ADAM33	NM_025220.2	407	cccccaacacacagcagcttgc	155508	556092	-	-	-
8883	KGNIP4	NM_025221.4	261	acctgtgtctgtctgcttcaaa	147165	549165	channel	-	-
8884	KGNIP4	NM_025221.4	262	acctgtgtctgtctgcttcaaa	147166	549166	see also 8883 line	-	-
8885	T3JAM	NM_025228.1	1407	caggacacaaagctcaacaa	394479	694064	-	-	-
8886	DPOK	NM_025233.3	1343	aacagattctccataagagtg	80855	731790	kinase_related	-	-
8887	SLG19A3	NM_025243.2	314	tgatgataacacacttact	179772	573060	-	-	-
8888	MGC2776	NM_025265.2	1475	atcgaaagagccctctcttttc	195093	815871	-	-	-
8889	ITH5	NM_025659.2	844	ggcactacttctctctaaaga	394653	724160	-	-	-
8890	THAP7	NM_030573.1	841	cgagcactatccagcagctgac	41345	452942	-	-	-
8891	STAR05	NM_030574.2	541	gacaaacgtgacacatcttcc	173862	570546	-	-	-
8892	CB5-M	NM_030575.1	319	atcatctgagtgaactaaac	303908	717223	-	-	-
8893	CPEB1	NM_030594.2	1213	tctctcccgagcactaaagac	98799	492081	-	-	-
8894	CPEB1	NM_030594.2	1214	tctctcccgagcactaaagac	98800	492082	see also 8893 line	-	-
8895	CPEB1	NM_030594.2	1474	cagatgctgctggtgataat	98806	492086	see also 8893 line	-	-
8896	CPEB1	NM_030594.2	1735	ctgctgtgctgcttcaatac	58814	492072	see also 8893 line	-	-
8897	CPEB1	NM_030594.2	1736	tgctgtgagcttctcaaac	58815	492073	see also 8893 line	-	-
8898	DICER1	NM_030621.2	283	agaagacattctgataact	48224	471821	-	-	-
8899	DICER1	NM_030621.2	613	agaccagcattctctatgact	48235	471830	see also 8898 line	-	-
8900	DICER1	NM_030621.2	617	tgaaagagttctatgact	48240	471833	see also 8898 line	-	-
8901	DICER1	NM_030621.2	669	tacttactctctgagcactaa	48241	471834	see also 8898 line	-	-
8902	DICER1	NM_030621.2	1689	gaagcttgatgaattctgac	48274	471863	see also 8898 line	-	-
8903	DICER1	NM_030621.2	3003	caagctctgattttctgac	48328	471896	see also 8898 line	-	-
8904	DICER1	NM_030621.2	3040	atcttaccacctgaataatt	48329	471899	see also 8898 line	-	-
8905	DICER1	NM_030621.2	3046	ccccactaatgaattctcttc	48331	471900	see also 8898 line	-	-
8906	DICER1	NM_030621.2	3463	tgagcttgatgaataaact	48345	471911	see also 8898 line	-	-
8907	DICER1	NM_030621.2	3735	gcaactgcaactgaattgac	48359	471924	see also 8898 line	-	-
8908	DICER1	NM_030621.2	5279	tgttaccagctgagttgac	48405	471950	see also 8898 line	-	-
8909	DICER1	NM_030621.2	5285	ctataacagcagcattatgac	48409	471960	see also 8898 line	-	-
8910	CPEB4	NM_030627.1	2701	tgagcagctgagcagctttca	58590	482184	-	-	-

Alzheimer disease(アルツハイマー病)

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8911	CPEB4	NM_030827.1	2703	gaagccctccgcaattcatt	58897	482185	see also 8910 line
8912	CPEB4	NM_030827.1	2704	accacccctccgcaattcatt	58898	482186	see also 8910 line
8913	CPEB4	NM_030827.1	2705	ccctccctccgcaattcatt	58899	482187	see also 8910 line
8914	KIAA1701	NM_030839.1	1043	atattatggaactgtttttg	394778	812108	-
8915	KIAA1701	NM_030839.1	1527	ctgaacatactaccccttctt	394787	812126	see also 8914 line
8916	KIAA1701	NM_030839.1	1530	aactacatactaccccttctt	394788	812127	see also 8914 line
8917	DUSP16	NM_030840.1	640	atagagctgttgaactcaaat	195551	534860	-
8918	DUSP16	NM_030840.1	642	gaagctatgttgaactcaaat	195552	534861	-
8919	DUSP16	NM_030840.1	727	ctgctatcttgctatcaatct	195554	534863	see also 8917 line
8920	DUSP16	NM_030840.1	800	agagctgttgaactcaaatct	195555	534864	see also 8917 line
8921	SET7	NM_030848.1	974	tggagctacatgagctgttct	213043	603842	-
8922	KIAA1715	NM_030850.1	510	atgaagctgttgaactgtttaa	394833	728200	-
8923	KIAA1715	NM_030850.1	1080	tctgtgttgcctacgtttttc	394846	728214	see also 8922 line
8924	TCF8	NM_030751.2	1915	aagatgcacagctgcacagctt	13010	449917	transcription_regulat
8925	TCF1	NM_030752.1	857	tgtgcacctgtgcacagctttt	102209	516018	or zinc binding
8926	TCF1	NM_030752.1	863	ctgtgtccaatgttatctcaac	102211	516019	chaparone
8927	WNT3	NM_030753.3	175	tctctgtgtctacccaatttgg	255471	639613	see also 8925 line
8928	WNT3	NM_030753.3	286	tgtctctgtctgcgaattacac	255474	639614	see also 8927 line
8929	WNT3	NM_030753.3	296	cgcgaattacatcagatcatgc	255475	639616	see also 8927 line
8930	WNT3	NM_030753.3	948	tatgaataacatccccaactttg	255482	639624	see also 8927 line
8931	WNT3	NM_030753.3	1008	tggaccctgctgcacagctcac	255484	639628	see also 8927 line
8932	TXNDC	NM_030755.3	429	actataagaagctacttaaac	265891	649882	-
8933	TCF7L2	NM_030756.1	510	ctcgcctctcctcgaagcttc	394866	468916	transcription_regulat
8934	TCF7L2	NM_030756.1	511	tcgcctctcctcgaagcttc	394867	468917	transcription factor-7-like-2
8935	TCF7L2	NM_030756.1	607	tcgcctctcctcgaagcttc	394870	468921	see also 8933 line
8936	TCF7L2	NM_030756.1	998	accctcctcctcgaagcttc	394880	468927	see also 8933 line
8937	TCF7L2	NM_030756.1	1691	agctcctgtctctatctacagg	394889	468934	see also 8933 line
8938	BHLHB3	NM_030762.1	198	ctgagctatctctcttcttat	1520	456377	transcription_regulat
8939	BHLHB3	NM_030762.1	199	tggagctatctctcttcttat	1521	456378	or transcription factor
8940	BHLHB3	NM_030762.1	274	tccgcacagctatgagaaga	1524	456383	see also 8938 line
8941	BHLHB3	NM_030762.1	275	ccgcacagctatgagaaga	1525	456384	see also 8938 line
8942	BHLHB3	NM_030762.1	548	cgccaaagaactcttccatcc	1532	456396	see also 8938 line
8943	ILKAP	NM_030768.2	549	ccctcttactcctggcttctat	166133	620666	phosphatase, kinase, related,
8944	MTFC	NM_030780.2	229	tcctcctgcactctgaagatcc	180798	773067	signal transduction
8945	CR9	NM_030782.2	831	ctgcagcagcttgcttgatga	394973	759723	folate transporter
8946	PTDSS2	NM_030783.1	508	agctcaagaagcagcatttcc	303085	598919	-
8947	GPR63	NM_030784.1	925	caagcttatgtatttttttctt	240190	625094	apopt, receptor activity, rhodopsin-like

8948	HM13	NM_030789.2	171	gggctctactctctttcaaat	191399	564859	-	-
8949	HM13	NM_030789.2	479	ggccctctactctcttttttt	191400	564863	see also 8948 line	-
8950	TD03	NM_030784.1	408	ccctctaacacacattcttgg	66527	486709	-	-
8951	APG16L	NM_030803.5	988	tggatgagctctgctctcttca	395211	532049	-	-
8952	C14r21	NM_030806.2	584	tggatgagctctgctctcttca	395217	810877	-	-
8953	NDEL1	NM_030808.2	293	agctctgagctgctctcttcaat	395225	714163	-	-
8954	NDEL1	NM_030808.2	584	aggagcacatctgctcttctgg	395240	714171	see also 8953 line	-
8955	NDEL1	NM_030808.2	630	caggcctctgagcaagatgcctt	395247	714175	see also 8953 line	-
8956	NDEL1	NM_030808.2	938	tctctgagatctgagcactcaaca	100450	514680	-	-
8957	SD03	NM_030813.3	1719	ggcttctgggctctgactatga	324095	692004	apoptosis	-
8958	CTNNB1	NM_030817.3	1356	agcgaccggcctctctgcatcaa	324096	692005	see also 8958 line	-
8959	CTNNB1	NM_030817.3	1357	ggcgaccggctctctgcatcaat	324096	692005	see also 8958 line	-
8960	TRIM8	NM_030812.1	11	tggcgagatctgaggaagctgc	160715	541817	-	zinc binding
8961	TRIM8	NM_030812.1	1631	ggcgacctctccaccaacactcc	160719	541629	see also 8960 line	-
8962	LBH	NM_030815.1	317	ccgaagatctgctctctctccc	395381	741239	-	-
8963	ANP32E	NM_030820.2	979	gggctctctactcttaaggaag	294316	713042	phosphatase	-
8964	ITM2C	NM_030826.3	373	cgcagctggcccaagataacttc	326877	504591	-	-
8965	DC-	NM_030927.1	278	tgtctgagctctgactatgaccc	326384	758398	-	-
8966	UNC93B1	NM_030930.1	418	caactctctctcaagctttttt	395537	708128	-	-
8967	DIAPH3	NM_030932.2	447	tgttgatgaggaagatctgccc	60019	483850	-	actin binding
8968	DIAPH3	NM_030932.2	1735	ggcgaccgctctctgactctctt	60050	483877	see also 8967 line	-
8969	DIAPH3	NM_030932.2	1746	cagctgactctctctgactcttc	60051	483879	see also 8967 line	-
8970	DIAPH3	NM_030932.2	2169	tcttgaagctctgactctgcaatt	60058	483884	see also 8967 line	-
8971	VMP1	NM_030938.2	283	cgctctctactctctgacttttt	395539	739268	-	-
8972	C6w462	NM_030938.2	283	tggccctgagctctgactcttcaa	395639	715545	-	-
8973	C10TNF3	NM_030945.1	142	ggctctctgagctgactctgctg	395656	695164	-	-
8974	C10TNF3	NM_030945.1	610	aggagctctgactctctctctg	395661	695203	see also 8973 line	-
8975	SLCO3A1	NM_030958.1	1695	tctgactctctcaagctctctct	274712	695629	-	-
8976	SLCO3A1	NM_030958.1	1731	tccacctctggcacaagaagaag	274713	695632	see also 8975 line	-
8977	SLCO3A1	NM_030958.1	1732	tccacctctggcacaagaagaag	274714	695633	see also 8975 line	-
8978	SLCO3A1	NM_030958.1	1887	cagctctcagatctctgactgac	274717	695635	see also 8975 line	-
8979	SLCO3A1	NM_030958.1	1985	agctctctgactctgactctgttg	274720	695636	see also 8975 line	-
8980	CMT4B2	NM_030962.1	988	tggatgaggaactcttcaaat	395731	643114	-	-
8981	CMT4B2	NM_030962.1	1957	ctctcacagatctctgactgttta	395766	643138	see also 8980 line	-
8982	CMT4B2	NM_030962.1	1962	cagatctctcaatctttagaaga	395767	643139	see also 8980 line	-
8983	RNF146	NM_030963.2	875	atggactctcgaggaggaagtaag	395883	725708	-	-
8984	RNF146	NM_030963.2	876	tggcctctctcgaggaggaagtaag	395884	725709	see also 8983 line	-
8985	RNF146	NM_030963.2	889	aagatgaagcagagatataataga	395885	725711	see also 8983 line	-
8986	RNF146	NM_030963.2	895	aggcggagataactgataatacc	395886	725712	see also 8983 line	-
8987	APCS1	NM_030978.1	497	aggagataactgactctctatcaa	395921	736391	-	-
8988	FLJ12525	NM_031206.2	430	tgttcaaggttttgactcttat	395924	767547	-	-
8989	FLJ12525	NM_031206.2	431	tgttcaaggttttgactcttatc	395925	767548	see also 8988 line	-

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8890	QJTE1	NM_031205.1	452	gcgtgagctgcgcactatcctg	212656	601450	transferase, transferring Ryccosyl groups	-
8891	SIQ5A28	NM_031212.2	1488	gcacatcctgctgctgctgctg	181232	574431	-	-
8892	SECG3L	NM_031216.2	266	aaagcctctgctgctgctgctg	395976	732590	-	-
8893	SECG3L	NM_031216.2	682	cgcaattgcgcagctgcagattt	395991	732599	see also 6992 line	-
8894	G2Z26	NM_031217.2	907	tgtggaagtcgcacaaatttaatt	78313	505127	-	-
8895	DKFZP434	NM_031217.2	1102	atgacacattatatacctcttaag	78322	505131	see also 8894 line	-
8896	TEX15	NM_031217.2	1780	gtgtgtgtgtgcctaaatgtctc	396059	743007	-	-
8897	TEX15	NM_031217.2	2878	tccaagacgaattaaacatt	396068	743032	see also 8896 line	-
8898	TEX15	NM_031217.2	6027	gaattgtacagatcaactgaagaa	396200	743136	see also 8896 line	-
8899	TEX14	NM_031217.2	1550	tactatgatatttgatgtcagg	102449	516231	kinase, related	-
9000	TEX12	NM_031217.2	272	agcagcaatgatgcactcttaca	396272	717890	-	-
9001	TEX12	NM_031217.2	274	caagcagtatgatccttaatt	396273	717891	see also 9000 line	-
9002	DKFZP434	NM_031284.3	415	ctgagcgtctcttgatgttaag	60140	732653	kinase, related	-
9003	GS61	NM_031289.1	563	caccccaactctgcagtttgagag	396512	700880	-	-
9004	N1235	NM_031291.1	376	acctgcgaatttgcuaaagtta	180457	573398	-	-
9005	N1235	NM_031291.1	378	atgcacatttgcuaaagtatt	180458	573397	see also 9004 line	-
9006	DKFZP434	NM_031291.1	861	cgattttagagcctatgatgatg	180478	573414	see also 9004 line	-
9007	RA533B	NM_031296.1	922	cgtctaaataaccctatgatatt	110187	520038	signal transduction	-
9008	RA533B	NM_031296.1	923	tgtctaaataaccctatgatatt	110188	520039	see also 9007 line	-
9009	DKFZP564	NM_031306.1	488	gttgtctgtatgagatgtatct	60355	478191	-	-
9010	DKFZP564	NM_031306.1	489	tgttgtttatggaagtattct	60356	478192	see also 9009 line	-
9011	BI023	NM_031306.1	1121	atgttaagttttatcgaacc	60381	478200	see also 9009 line	-
9012	FKSG32	NM_031307.2	402	cagcagcattctcaactatcacc	396665	713204	-	-
9013	FKSG32	NM_031307.2	964	atggaagaagcagaagatttttga	396688	713226	see also 9012 line	-
9014	FKSG32	NM_031307.2	1389	acpaatttgagcaccattttt	396702	713243	see also 9012 line	-
9015	STK31	NM_031414.2	2571	tggatcaactatcagaacaattg	66353	486448	kinase, related	-
9016	MAR4	NM_031417.2	992	cagggagcccaagaagattgag	90326	508022	kinase, related	-
9017	CDCA1	NM_031423.2	448	acccgttaattgactttgact	278222	713164	-	-
9018	COG3	NM_031431.2	777	cttgcacaaattgatttgtatt	268486	795851	-	-
9019	COG3	NM_031431.2	779	agcccaatttgatttgtatt	268487	795853	see also 9018 line	-
9020	COG3	NM_031431.2	787	tggatgatttgatttgtatt	268489	795854	see also 9018 line	-
9021	COG3	NM_031431.2	1970	tgtcattcttccattatctac	268528	795883	see also 9018 line	-
9022	COG3	NM_031431.2	2013	gaactcagaagaactgagatgtc	268530	795885	see also 9018 line	-

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9023	CGG3	NM_031431.2	2087	tgcgaacaaatgcctcttgatgct	288532	795889	see also 9018 line			
9024	DKFZP564	NM_031435.1	618	tcgcctgctgttagcccaaaatt	25134	718803				
9025	DKFZP564	NM_031435.1	619	cgcctgtgttagcccaaaatt	25135	718804	see also 9024 line			
9026	DKFZP564	NM_031435.1	620	gcctgtgttagcccaaaatt	25136	718805	see also 9024 line			
9027	DKFZP564	NM_031435.1	622	ctgtgttagcccaaaatttgc	25137	718806	see also 9024 line			
9028	RASSF5	NM_031437.1	1013	caacttttaagccggaacacag	315033	539601	signal transduction			
9029	SOX7	NM_031439.2	1053	ggcactatgatgcgaatgaatc	40637	489039	or			DNA binding
9030	TM4SF10	NM_031442.2	723	ggcactatgatgcgaatgaatc	397019	752632				
9031	TM4SF10	NM_031442.2	723	tgcctgtgtgtgcacataatt	397020	752633	see also 9030 line			
9032	TM4SF10	NM_031442.2	725	gcctgtgtgtgcacataatt	397021	752635	see also 9030 line			
9033	SEL0	NM_031454.1	743	gcctgtgtgtgtgcacataatt	227448	731368				
9034	BAL	NM_031454.1	1355	gcctgtgtgtgtgcacataatt	277192	671012				
9035	SESX2	NM_031459.3	677	gcctgtgtgtgtgcacataatt	306419	674297	cell cycle			
9036	SESX2	NM_031459.3	678	gcctgtgtgtgtgtgcacataatt	306420	674298	see also 9035 line			
9037	SESX2	NM_031459.3	1347	gcctgtgtgtgtgtgtgcacataatt	306424	674301	see also 9035 line			
9038	AP-GTOL	NM_031482.3	818	atgcaaacatcatcatcatcagc	397198	532021				
9039	LMBT12	NM_031488.3	482	gcctgtgtgtgcacaaattgcgc	113125	477697	transcription regulat			
9040	LONP	NM_031490.2	580	ctgcctcctgcattgtcaaatg	88754	488177	or			
9041	LONP	NM_031490.2	1009	atgtctcctgcagaaattattg	88770	488196	see also 9040 line			
9042	ENAM	NM_031889.1	411	atgcctccgaatgccttgattgag	289639	680048				structural constituent of tooth enamel
9043	ENAM	NM_031889.1	412	tgcctccgaatgccttgattgag	289640	680049	see also 9042 line			
9044	ENAM	NM_031889.1	415	cccgaaatgcctgttgattgagc	289641	680050	see also 9042 line			
9045	CDH20	NM_031891.2	1224	tgcgaacacatacatcagatcatt	139914	545679				calcium ion binding
9046	SH3KBP1	NM_031892.1	1097	aggttatctgcgaagtcaattt	322110	711262				
9047	CACNG38	NM_031895.4	543	cggctctccgcgcctcaatgc	261642	645291	channel			voltage-gated calcium channel
9048	CACNG7	NM_031896.3	273	gcgcgaacaaacgcgcgaatc	261629	747014	channel			voltage-gated calcium channel
9049	GORASP1	NM_031898.2	227	tgcgcctcctgcgcgcgaacagc	397231	737502				
9050	CIOTN14	NM_031909.1	1115	cgaacacacacgaatgaatcton	397252	721946				
9051	CIOTN17	NM_031911.3	921	tgcgcgcgcgcgcgcgcgcgc	397272	758916				
9052	CSQUJF1	NM_031919.1	350	tgcgaacacacgcgcgcgcgc	278562	691115				
9053	REP1	NM_031922.2	1382	tgcgcgcgcgcgcgcgcgcgc	151960	552069				
9054	REP1	NM_031922.2	1391	tgcgcgcgcgcgcgcgcgcgc	151968	552920	see also 9053 line			
9055	REP1	NM_031922.2	1881	gcgcgcgcgcgcgcgcgcgc	151979	552924	see also 9053 line			
9056	RAB34	NM_031934.3	974	agctcgaacacatacatctgct	110203	520057	signal transduction			protein transporter

amelogenesis imperfecta(エナメル形成不全症)

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9057	R4B34	NM_031934.3	976	ctaaagcaacacacatgctcttc	110204	520058	see also 9056 line		
9058	BCD02	NM_031935.1	820	taccagagcttggaagacag	224535	610957	-	growth factor	-
9059	B29	NM_031935.2	803	aggtctcgaagctctgaacaaa	397499	730133	-	-	-
9060	NYD-SP12	NM_031955.2	676	tgccagctctctctctgaagaaa	315027	679344	signal transduction	-	-
9061	RAS3F4	NM_032023.3	966	agccctctctctctctctctctt	397635	765843	-	-	-
9062	CD411	NM_032026.1	399	aaagatctctcaactcaaatattt	397636	765844	see also 9062 line	-	-
9063	CD411	NM_032026.1	403	tactcaactcaaatatttgaaa	101322	515391	kinase related	-	-
9064	SS1K	NM_032037.1	268	cccgcagctctctcaacagtttc	101323	515392	see also 9064 line	-	-
9065	SS1K	NM_032037.1	269	cccgcagctctctcaacagtttc	118182	750731	-	-	-
9066	NCA1D	NM_032041.1	351	ggagctgcttccaaatttgaga	118184	750732	see also 9066 line	-	-
9067	NCA1D	NM_032041.1	355	tgagcaactgaacttggagaa	23005	496401	-	-	-
9068	BRIP1	NM_032043.1	1764	tggcaactgttgcagtgttttta	23033	496425	see also 9068 line	-	-
9069	BRIP1	NM_032043.1	2576	ctggccgtcattgtatgaaatt	23034	496427	see also 9068 line	-	-
9070	BRIP1	NM_032043.1	2578	ggccctcattgtatgaaattca	281164	667356	signal transduction	-	-
9071	KREMEN1	NM_032045.3	654	acccctccgctgggaactctca	281169	667361	see also 9071 line	-	-
9072	KREMEN1	NM_032045.3	926	tctctctctgctcattcaatca	131048	755520	-	-	-
9073	EMILIN2	NM_032048.1	3244	ctgactctcaacacatttgatga	397757	447519	transcription regulator	-	-
9074	OTIP	NM_032105.2	216	accggagagcgcgtgaactgaga	91257	508385	or	-	-
9075	MG2599	NM_032116.2	1028	tggccctcaacagctctcattg	397781	714387	see also 9076 line	-	-
9076	FLJ12953	NM_032118.2	255	tggatgaactcccccattctca	397782	714388	see also 9076 line	-	-
9077	FLJ12953	NM_032118.2	257	agatgaactcccccattctcaact	264579	648851	-	-	-
9078	DKFZP564	NM_032125.1	150	cccagctctcagcgtgtttttcc	397928	815381	-	-	-
9079	DKFZP566	NM_032127.1	1103	atcactgctctgaagattgagg	397930	815382	see also 9079 line	-	-
9080	DKFZP566	NM_032127.1	1177	caagctctgcaactctctcagct	397931	815383	see also 9079 line	-	-
9081	DKFZP566	NM_032127.1	1180	cccttgcaactctctcagtttcc	397938	815379	see also 9079 line	-	-
9082	DKFZP566	NM_032127.1	3084	gagctctctctgagcagaatgc	108551	709938	signal transduction	-	-
9083	ARL6	NM_032146.3	590	ctgggaacctctataaagaag	266662	653764	-	-	-
9084	DKFZP434	NM_032148.2	1084	tacaccacttctctgctagtgtt	195326	778828	-	-	-
9085	TREX1	NM_032166.2	1933	tgtctgactctgacacacatca	388492	804931	see also 9086 line	-	-
9086	FLJ12787	NM_032175.1	315	agccctcattctatgaaaccttct	388493	804932	see also 9086 line	-	-
9087	FLJ12787	NM_032175.1	318	gctctgattctgaaacctcttctt	388494	804933	see also 9086 line	-	-
9088	FLJ12787	NM_032175.1	317	ctgcatatctgaaacctcttctt	388495	804934	see also 9086 line	-	-
9089	FLJ12787	NM_032175.1	318	tgtcatatctgaaacctcttctt	388496	804935	see also 9086 line	-	-
9090	FLJ12787	NM_032175.1	323	atcgaaacctcttcttcttctt	388556	811153	see also 9091 line	-	-
9091	KIAA0157	NM_032182.2	692	agagctgagcactctctcttct	398557	811154	see also 9091 line	-	-
9092	KIAA0157	NM_032182.2	696	tggagctgagcactctctcttct	398558	811155	see also 9091 line	-	-
9093	KIAA0157	NM_032182.2	699	gagcagctgagcactctctctca					

9094	KIAA0157	NN 032182.2	341	caccacacacacacagaagatuc	308562	811159	see also 9091 line	transcription, regulat or	-
9095	ASCIp100	NN 032204.3	200	aggcagacacgctgtttgtgtta	308643	738610	-	-	-
9096	ASCIp100	NN 032204.3	314	tggctctgctctacgtaaatto	308645	738615	see also 9095 line	-	-
9097	ASCIp100	NN 032204.3	315	ggctctgctctacgtaaatct	308646	738616	see also 9095 line	-	-
9098	FLJ21742	NN 032201.1	1848	ggctctgacgagcagttaactc	308697	723212	-	-	-
9099	ANKRD17	NN 032211.3	1177	tggctctcggctgtctatttga	15757	742365	-	-	-
9100	ANKRD17	NN 032211.3	1191	tggatttggacacataaagaaa	15759	742366	see also 9099 line	-	-
9101	ANKRD17	NN 032211.3	1363	atgttctgattctttttgaagc	15768	742373	see also 9099 line	-	-
9102	ANKRD17	NN 032211.3	2088	tgaacacacgctctaatatggcc	15765	742580	see also 9099 line	-	-
9103	ANKRD17	NN 032211.3	2521	cagtcctacgagcagcttggaa	15792	742601	see also 9099 line	-	-
9104	ANKRD17	NN 032211.3	2545	gaagtcctacggaagaatcaacga	15793	742603	see also 9099 line	-	-
9105	ANKRD17	NN 032211.3	3029	caaggtctcctcaaatcttaca	15804	742610	see also 9099 line	-	-
9106	ANKRD17	NN 032211.3	3031	ggctctcctcgaactctacaga	15805	742611	see also 9099 line	-	-
9107	ANKRD17	NN 032211.3	3132	aacacacacgaactcttagag	15806	742615	see also 9099 line	-	-
9108	ANKRD17	NN 032211.3	3323	cttgaacattgtgaacacatttga	15811	742618	see also 9099 line	-	-
9109	ANKRD17	NN 032211.3	4316	aggtgtgtgctactgttcaatcaa	15827	742640	see also 9099 line	-	-
9110	ANKRD17	NN 032211.3	4318	gtgtgtgtgctactgttcaatcaa	15828	742641	see also 9099 line	-	-
9111	ANKRD17	NN 032211.3	5913	gaacctctcagacacacttaact	15863	742685	see also 9099 line	-	-
9112	ANKRD17	NN 032211.3	6113	ttgttcaacatttctgaatcttacc	15867	742690	see also 9099 line	-	-
9113	ANKRD17	NN 032211.3	6221	agaacacacacacagatctacac	15870	742693	see also 9099 line	-	-
9114	ANKRD17	NN 032211.3	6770	tccagtcactctctgactcttaagc	15877	742710	see also 9099 line	-	-
9115	ANKRD17	NN 032211.3	8773	agctactctctcagctctctatata	15879	742711	see also 9099 line	-	-
9117	ANKRD17	NN 032211.3	8889	cttggcctctctgacacttttt	15883	742713	see also 9099 line	-	-
9118	ANKRD17	NN 032211.3	8870	tggcctctcttgcacattgtttg	15884	742714	see also 9099 line	-	-
9119	ANKRD17	NN 032211.3	7065	tccagctctctcagctgtatttga	15892	742720	see also 9099 line	-	-
9120	CHD6	NN 032211.3	7610	agcaatgagctgacgagatagaca	15902	742734	see also 9099 line	-	-
9121	CHD6	NN 032211.3	2189	cttgcattctctctaaacacact	18414	450420	-	-	-
9122	CHD6	NN 032211.3	2698	taccactctatgctgaattgttg	18421	450432	see also 9120 line	-	-
9124	FLJ22679	NN 032221.1	3008	agccatgcacgcctctcttgaagc	18422	450433	see also 9120 line	-	-
9125	FLJ22679	NN 032221.1	3009	tgtgtcctcttggagctctagaag	381763	479545	-	-	-
9126	FLJ22679	NN 032221.1	1051	atgtgtgcgcctcttgaatata	386737	706945	see also 9124 line	-	-
9127	FLJ22679	NN 032231.3	1052	tgtgtgcgcctcttgaatata	386738	706946	see also 9124 line	-	-
9128	FLJ22679	NN 032231.3	277	aactatccacacacacagaagc	388908	726291	-	-	-
9129	FLJ23356	NN 032231.2	741	aacacacacactctcaaatctcc	83329	489177	kinase, related	-	-
9129	ZNF81	NN 032768.3	1258	cttctcttctctctctctcaaaaa	399224	747080	-	-	-
9130	ADI58	NN 032702.2	1131	tccattctctctctctctctctccc	399266	749095	-	-	-
9131	ADI58	NN 032702.2	2285	tccagctctctctctctctctctccc	399295	749096	see also 9130 line	-	-
9132	MAFI	NN 032712.2	868	atgtgcacatctctctctctctccc	399304	727312	-	-	-
	DKFZp761								
9133	B0514	NN 032289.1	1810	ggagctctctctctctctctctctccc	399397	735512	-	-	-
	DKFZp761								
9134	B0514	NN 032289.1	2184	tggctctctctctctctctctctctctg	399398	735518	see also 9133 line	-	-

9135	DKFZp761 B0514	NM_032298.1	2320	aagcgtttatagaccataacc	399401	735522	see also 9133 line
9136	DKFZp761 C121	NM_032290.1	409	ttagcaaatgtctctatgata	399413	750595	-
9137	DKFZp761 C121	NM_032290.1	410	tgtcaaatgtctctatcatata	399414	750596	see also 9136 line
9138	DKFZp761 C121	NM_032290.1	609	gacatcaatgtctctatcatata	399423	750604	see also 9136 line
9139	DKFZp761 D221	NM_032291.1	259	atggggaccacaafgattttat	399444	754828	-
9140	DKFZp761 D221	NM_032291.1	260	tggggccacaatggattttatg	399445	754829	see also 9139 line
9141	DKFZp761 D221	NM_032291.1	261	ggggccacaatggattttatgc	399446	754830	see also 9139 line
9142	DKFZp761 D221	NM_032291.1	557	cccggttgcaatgaagaacct	399454	754834	see also 9139 line
9143	DKFZp761 D221	NM_032291.1	978	cccaaatctgtgctgttaagtc	399467	754837	see also 9139 line
9144	DKFZp761 D221	NM_032291.1	1993	atggcaataccaagaactctgg	399493	754850	see also 9139 line
9145	J1523	NM_032293.3	666	aagatgttcaacaatgaattgg	297549	665006	-
9146	GMANK1	NM_032294.2	578	ctggctacaagaagaaggaaga	750393	497064	kinase related
9147	SLC37A3	NM_032295.1	1095	ccacaaagctctcattctgctgc	274417	658686	-
9148	SLC37A3	NM_032295.1	1170	tggcagggtttctactctttt	274423	659507	see also 9147 line
9149	ST13	NM_032298.1	1779	tggactcaatgtctatgaacttt	275119	657603	transporter
9150	MGC2714	NM_032299.2	828	atcaaaagtctctgttttgaaaca	399528	740530	-
9151	MGC3200	NM_032305.1	320	gaggagagctccctactctatcc	399604	728540	-
9152	PDIP46	NM_032311.3	1132	aagtgcaacctctcaactgaatgg	64903	802153	-
9153	MGC11061	NM_032312.2	601	tgtgtctaatgattataaccatt	399660	724945	-
9154	GMRP-1	NM_032320.3	370	ttagcaatgagcctctaaact	131518	530677	-
9155	GMRP-1	NM_032320.3	1139	atgtgtgtctctgagcaactt	131528	530684	see also 9154 line
9156	GMRP-1	NM_032320.3	1143	tgtgtctctgagcaacttgaatt	131529	530686	see also 9154 line
9157	GMRP-1	NM_032320.3	1145	gtgtctctgagcaacttgaatt	131530	530686	see also 9154 line
9158	GMRP-1	NM_032320.3	1146	tgtctctgagcaacttgaattt	131531	530687	see also 9154 line
9159	GMRP-1	NM_032320.3	1537	aagatgcacacttgaactctcca	131539	530688	see also 9154 line
9160	GMRP-1	NM_032320.3	1539	gaatgcacacttgaactctcaat	131540	530689	see also 9154 line
9161	GMRP-1	NM_032320.3	1547	atgtatcaacttgaactctcaat	131542	530690	see also 9154 line
9162	GMRP-1	NM_032320.3	1550	taaaactctatgtctctaaagct	131543	530691	see also 9154 line
9163	ZDHCH16	NM_032321.2	1067	gggttgagcagctcagagagag	399760	714287	-
9164	MGC12458	NM_032328.1	435	atgtgtgctctgacatgagag	148208	542813	-
9165	PHF6	NM_032335.1	281	aagtgactctgagatgaatgac	35053	453807	-
9166	MGC47199	NM_032336.1	281	agcaagctctgagatgaatgac	399790	715045	-
9167	MGC47199	NM_032336.1	796	cagcactgtgtctgctacaaac	399799	715052	see also 9166 line

9169	MGG14799	NM_032336.1	797	agccttcttcagctacaaac	399800	715033	see also 9186 line
9169	MGG2047	NM_032348.2	1241	agcttcagctcagctacaaac	399865	715251	-
9170	MGG13272	NM_032355.2	840	cagcttcagctcagctacaaac	282002	668915	-
9171	MGG13272	NM_032355.2	840	cagcttcagctcagctacaaac	282003	668916	see also 9170 line
9172	ACB06	NM_032360.2	516	tgcttcctctctctcagctacaaac	172487	568948	-
9173	ACB06	NM_032360.2	501	cccttcagctcagctacaaac	172489	568950	see also 9172 line
9174	THOC3	NM_032361.1	747	agcttcagctcagctacaaac	399965	735105	-
9175	MGG16202	NM_032373.2	397	cagcttcagctcagctacaaac	400026	739367	-
9176	MGG2582	NM_032374.2	156	agcttcagctcagctacaaac	400047	725679	-
9177	SYT12	NM_032379.2	1565	tgcttcagctcagctacaaac	400092	540881	-
9178	EPF2	NM_032380.3	1848	agcttcagctcagctacaaac	57303	477342	-
9179	PRKNW14	NM_032387.2	531	tgcttcagctcagctacaaac	97994	512546	kinase related
9180	PRKNW14	NM_032387.2	533	gcgcagctcagctacaaac	97995	512547	see also 9179 line
9181	PRKNW14	NM_032387.2	534	cgcttcagctcagctacaaac	97996	512548	see also 9179 line
9182	PRKNW14	NM_032387.2	1254	ctgcagctcagctacaaac	98001	512554	see also 9179 line
9183	PRKNW14	NM_032387.2	3065	agcttcagctcagctacaaac	98021	512573	see also 9179 line
9184	PINK1	NM_032409.1	468	gtcagctcagctacaaac	96834	511875	kinase related
9185	CARD11	NM_032415.2	898	agcttcagctcagctacaaac	129599	677018	apoptosis
9186	CARD11	NM_032415.2	1973	gcgcagctcagctacaaac	129612	677028	see also 9185 line
9187	HRD1	NM_032431.1	370	cagcttcagctcagctacaaac	400222	735891	-
9188	HRD1	NM_032431.1	891	gcgcagctcagctacaaac	400227	736000	see also 9187 line
9189	KIAA1796	NM_032439.1	784	tgcttcagctcagctacaaac	400298	802014	-
9190	KIAA1796	NM_032439.1	1050	cccttcagctcagctacaaac	400304	802027	see also 9189 line
9191	KIAA1796	NM_032439.1	1159	cagcttcagctcagctacaaac	400308	802035	see also 9189 line
9192	KIAA1796	NM_032439.1	1160	agcttcagctcagctacaaac	400309	802036	see also 9189 line
9193	KIAA1796	NM_032439.1	1198	tgcttcagctcagctacaaac	400311	802039	see also 9189 line
9194	KIAA1796	NM_032439.1	1314	tgcttcagctcagctacaaac	400313	802042	see also 9189 line
9195	MLR2	NM_032440.1	550	cagcttcagctcagctacaaac	400318	771919	-
9196	MLR2	NM_032440.1	635	cccttcagctcagctacaaac	400317	771922	see also 9195 line
9197	MLR2	NM_032440.1	1316	agcttcagctcagctacaaac	400329	771942	see also 9195 line
9198	MLR2	NM_032440.1	1319	tgcttcagctcagctacaaac	400330	771943	see also 9195 line
9199	MLR2	NM_032440.1	1352	ctgcagctcagctacaaac	400331	771945	see also 9195 line
9200	MLR2	NM_032440.1	1365	cagcttcagctcagctacaaac	400332	771947	see also 9195 line
9201	MLR2	NM_032440.1	1395	agcttcagctcagctacaaac	400333	771948	see also 9195 line
9202	MLR2	NM_032440.1	1396	gcgcagctcagctacaaac	400334	771949	see also 9195 line
9203	MLR2	NM_032440.1	1399	agcttcagctcagctacaaac	400335	771951	see also 9195 line
9204	MLR2	NM_032440.1	1401	agcttcagctcagctacaaac	400336	771952	see also 9195 line
9205	MLR2	NM_032440.1	1402	agcttcagctcagctacaaac	400337	771953	see also 9195 line
9206	MLR2	NM_032440.1	1403	agcttcagctcagctacaaac	400338	771954	see also 9195 line
9207	MLR2	NM_032440.1	1422	agcttcagctcagctacaaac	400339	771955	see also 9195 line
9208	MLR2	NM_032440.1	1575	agcttcagctcagctacaaac	400342	771957	see also 9195 line
9209	MLR2	NM_032440.1	1577	agcttcagctcagctacaaac	400343	771958	see also 9195 line
9210	MLR2	NM_032440.1	1681	cagcttcagctcagctacaaac	400345	771960	see also 9195 line
9211	PHF6	NM_032458.1	1055	cagcttcagctcagctacaaac	35060	453809	-

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9253	DROTNB 1A	NM 032581.2	1060	tgctgtgttcactgaagaag	254392	745514	see also 9252 line	
9254	DROTNB 1A	NM 032581.2	1116	aaggaagctcaagagctgtatca	254396	745517	see also 9252 line	
9255	DROTNB 1A	NM 032581.2	1267	ctgaagctgaagcgggatttat	254401	745522	see also 9252 line	
9256	DROTNB 1A	NM 032581.2	1270	aatttaccagagagattttatcc	254402	745523	see also 9252 line	
9257	PHACS	NM 032592.1	1631	ctgtttttttcttgagaagttacc	219322	606097	-	-
9258	LOXL3	NM 032603.2	1354	agcgaagctgcgtccaaatgac	163132	503046	receptor activity	scavenger receptor
9259	LOXL3	NM 032603.2	2120	atctgaagccagagagctccattt	163136	503051	see also 9258 line	
9260	LOXL3	NM 032603.2	2122	tgctgaacagagagctccattct	163137	503052	see also 9258 line	
9261	LNX	NM 032622.1	1267	atctgttccagctccatctgaaga	316357	681119	-	-
9262	OSAP	NM 032632.2	231	cagctgcgtctgtgtgtattat	401135	724508	-	-
9263	SSBP4	NM 032627.1	1330	cgcgttcctgcagcgaagctact	19886	452008	transcription_regulat	
9264	PAPOLA	NM 032632.2	1003	tgacttcactctgtgtcatataa	53212	474806	transcription_regulat	polynucleotide
9265	PIGO	NM 032634.2	903	tgaggaagcgtgtgtctttcca	205434	596212	or	adenyl/transferase
9266	PIGO	NM 032634.2	1119	tgctcttccacccctgaattgg	205436	596213	see also 9265 line	
9267	PIGO	NM 032634.2	2381	atgtctgcgcacgaattgttgg	205452	596233	see also 9265 line	
9268	PIGO	NM 032634.2	2455	tgctctgcgcacgaattgttgg	205454	596234	see also 9265 line	
9269	PIGO	NM 032634.2	2459	ttgcgcgtatgttaattctcaag	205455	596235	see also 9265 line	
9270	PIGO	NM 032634.2	2460	tgccgcgtatgttaattctcaag	205456	596236	see also 9265 line	
9271	GATA2	NM 032636.3	854	accacgcaccacaaagaattgt	4420	444339	translation	
9272	FOXP1	NM 032652.3	1420	agcattgcctgcgcagatgaagt	4199	444170	transcription factor	
9273	FOXP1	NM 032652.3	1739	cagcgcgtctgcgcagatgaagt	4205	444171	see also 9272 line	
9274	FOXP1	NM 032652.3	1816	cagaatgttgcgcagatgaagt	4207	444181	see also 9272 line	
9275	FOXP1	NM 032652.3	2081	tggttaaccttccctttattttaa	4214	444190	see also 9272 line	
9276	FOXP1	NM 032652.3	2121	gccttaccacacctcttaagcag	4215	444191	see also 9272 line	
9277	MG01132	NM 032718.2	937	cagctatctcttcttaagctgaa	257995	642222	-	-
9278	RTN4P1	NM 032730.2	466	tgctcttccactctctctcaaat	158933	559571	-	-
9279	RTN4P1	NM 032730.2	507	tgctcttccactctctctcaaat	158935	559575	see also 9278 line	
9280	RTN4P1	NM 032730.2	1349	tgctcttccactctctctcaaat	158938	559599	see also 9278 line	
9281	MINA53	NM 032775.3	982	agcaactccagacacattcaag	401433	720059	-	-
9282	THSD2	NM 032775.3	283	atgcactctgcactgtttttg	401487	734174	-	-
9283	THSD2	NM 032784.2	537	tggaatctgatcatccagatata	401494	734181	see also 9282 line	
9284	THSD2	NM 032784.2	540	aacttgatctcatcatataraata	401495	734182	see also 9282 line	
9285	AMID	NM 032791.4	395	ttgcacaaagcttcttcaatttc	224758	611097	apoptosis	
9286	SPPL2A	NM 032909.2	1073	cagctggagctgtttttcaag	191737	554637	-	-
9287	SPPL2A	NM 032909.2	1388	accagctctgtgtgactactat	191744	554644	see also 9286 line	
9288	FBXO18	NM 032807.3	1123	atgctgcgaacctctatcgatac	234579	706032	-	-
9289	FBXO18	NM 032807.3	1466	tgagcttgacttcaactatttctt	234582	706039	see also 9288 line	
9290	FBXO18	NM 032807.3	1492	acctatattcttcagagatttcc	234583	706040	see also 9288 line	

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9291	FBXO18	NM_032807.3	2275	cgagcaacagcagctataccttc	234604	706059	see also 9288 line
9292	FLJ14600	NM_032810.2	549	gaggtatatacagcttttagctc	82973	489123	-
9293	FLJ14600	NM_032810.2	1382	gaactctctcagcagctatgaaga	82990	489143	see also 9292 line
9294	SLOC3584	NM_032826.2	473	cacacgctatcccaataagtgatc	272173	711509	-
9295	SLOC3584	NM_032826.2	474	cgacgctatcccaataagtgatc	272174	711510	see also 9294 line
9296	SLOC3584	NM_032826.2	1017	ggtttcttactctctctgaaca	272189	711528	see also 9294 line
9297	HAT16	NM_032827.3	865	tctctactctctctctcaacgc	401731	770882	-
9298	HAT16	NM_032827.3	871	tctctactctctctctcaacgc	401732	770883	see also 9297 line
9299	HAT16	NM_032827.3	872	tctctactctctctctcaacgc	401733	770884	see also 9297 line
9300	PPP1R15B	NM_032833.1	2340	aagaacattcagtgatattata	401863	748460	-
9301	PPP1R15B	NM_032833.1	2413	atcgaggtctcagacacagcttc	401864	748461	see also 9300 line
9302	PPP1R15B	NM_032833.1	2414	tgcaggtctcagacacagcttc	401865	748462	see also 9300 line
9303	PPP1R15B	NM_032833.1	2416	cgaggtctcagacacagcttc	401866	748463	see also 9300 line
9304	DRC2	NM_032838.1	438	tactctctctctctctctctg	401866	770370	-
9305	FLJ14803	NM_032842.1	150	tactctctctctctctctctg	401928	802068	-
9306	FLJ14803	NM_032842.1	151	tactctctctctctctctctg	401955	802069	see also 9305 line
9307	FLJ14803	NM_032842.1	152	actctctctctctctctctg	401970	802108	see also 9305 line
9308	FLJ14803	NM_032842.1	153	actctctctctctctctctg	401974	802123	see also 9305 line
9309	FLJ14831	NM_032844.1	537	aacggcgaatctctctctctct	83000	488814	kinase related
9310	RAB2B	NM_032846.2	373	aacggcgaatctctctctctct	83000	488814	kinase related
9311	FLJ14834	NM_032849.2	612	actctctctctctctctctg	110112	452900	signal transduction
9312	FLJ14834	NM_032849.2	614	actctctctctctctctctg	402008	729749	-
9313	ZFYVE19	NM_032850.3	451	ctgacacactctctctctctg	402009	729750	see also 9311 line
9314	LACTB	NM_032851.2	657	tctctctctctctctctctg	161374	354951	-
9315	LACTB	NM_032851.2	690	aagctggaattctctctctctg	285487	658350	-
9316	LACTB	NM_032851.2	1124	aagaacacagcagcagctgtag	285495	658364	see also 9314 line
9317	LACTB	NM_032851.2	1201	tactctctctctctctctctg	285498	658368	see also 9314 line
9318	FLJ14904	NM_032856.1	585	cgagctcaacagctctctctg	402105	787726	-
9319	FLJ14904	NM_032856.1	642	aacgaacagctctctctctg	402107	787729	see also 9318 line
9320	FLJ14904	NM_032856.1	978	tgcctctctctctctctctg	402118	787743	see also 9318 line
9321	FLJ14904	NM_032856.1	1244	agagattcagctctctctctg	402128	787749	see also 9318 line
9322	G6orf93	NM_032860.3	500	tgcagctctctctctctctg	402140	806079	-
9323	G6orf93	NM_032860.3	1253	agagattcagctctctctctg	402160	806101	see also 9322 line
9324	FLJ14936	NM_032864.2	649	agagattcagctctctctctg	402180	777615	-
9325	CHIL66	NM_032869.2	529	atgaggtatctctctctctg	402286	721827	-
9326	CHIL66	NM_032869.2	796	tgcagattctctctctctctg	402299	721841	see also 9325 line
9327	CHIL66	NM_032869.2	1325	atgaggtatctctctctctg	402312	721862	see also 9325 line
9328	CHIL66	NM_032869.2	1591	ctctctctctctctctctctg	402318	721869	see also 9325 line
9329	KUAF1959	NM_032873.2	1827	tgcaggtctctctctctctg	236684	621056	-
9330	JUB	NM_032876.4	1732	caagctctctctctctctctg	273698	701351	-
9331	MGI15730	NM_032880.2	452	cgagctctctctctctctctg	402394	813532	receptor activity
9332	MGI15730	NM_032880.2	696	gaggtctctctctctctctg	402404	813535	see also 9331 line
9333	MGI15730	NM_032880.2	709	cagagctctctctctctctg	402405	813536	see also 9331 line

melanoma (メラノーマ), non-small-cell lung cancer (非小細胞肺癌)

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9334	COL27A1	NM_032888.2	663	gagcagctgcgtgcacacttct	285087	659404	-	-	-
9335	COL27A1	NM_032888.2	667	ccgttcgtccacacttcacatc	285089	659405	see also 9334 line	-	-
9336	COL27A1	NM_032888.2	5912	accctaccacagctccagctac	285108	659423	see also 9334 line	-	-
9337	DSP1	NM_032890.2	1121	tggatcaatccacagctgactct	264471	633009	-	-	-
9338	MGC14161	NM_032892.1	2086	tgcacacatccacagctcaaac	402476	476222	-	-	-
9339	MGC14161	NM_032892.1	2089	aacacatccatccacacttct	402487	476223	see also 9338 line	-	-
9340	MGC14161	NM_032892.1	2122	ggcgctgcttctccacactc	402458	476224	see also 9338 line	-	-
9341	MGC14178	NM_032893.3	1004	ttgcacactccagctcggaacttc	402474	784666	-	-	-
9342	SPF45	NM_032905.3	1223	ccatgcagctgctttttgacttt	66243	485809	-	-	rhodopsin-like receptor
9343	SPF45	NM_032905.3	1301	ttgcagcgtgtgtgaagactgt	66245	485811	see also 9342 line	-	-
9344	MGC14156	NM_032906.2	336	ttgtttgactccttcattatgata	402500	717283	-	-	-
9345	REG	NM_032918.1	367	tcttgcacaaactctcatctctg	110620	520274	signal transduction	-	-
9346	C7orf35	NM_032936.2	463	tggttcaacttcacactgtactct	402564	797111	-	-	-
9347	SYTL2	NM_032943.1	978	tggttccactcactgttactatg	402575	540825	-	-	-
9348	SYTL2	NM_032943.1	2090	atgccttccaaagtctctgaagaa	402602	540833	see also 9347 line	-	-
9349	AXUD1	NM_033027.2	1736	tccagctctccacactgaactgt	311367	676918	apoptosis	-	-
9350	AXUD1	NM_033027.2	1738	ccagctctccacactgaactgtct	311368	676919	see also 9349 line	-	-
9351	BOLL	NM_033030.3	620	aacattgttccacatcaagaagaa	58201	479689	-	-	-
9352	BOLL	NM_033030.3	625	tggttcacacacatagaagaaac	58202	479690	see also 9351 line	-	-
9353	DMRTC2	NM_033052.1	237	ccagctctccagctgtccaaagtc	2752	443099	or	-	-
9354	DMRTC2	NM_033052.1	242	tccgctgttccacaaagctgcc	2753	443101	see also 9353 line	-	-
9355	HAT1	NM_033055.2	75	cggagcgcgcctccacagactag	25792	642285	-	-	-
9356	HAT1	NM_033055.2	198	tccaacacatcctctctgata	25797	642274	see also 9355 line	-	-
9357	Protein	NM_033102.1	1873	ggctctctgcctcaacttacttg	403256	612771	-	-	-
9358	STN2	NM_033104.2	2598	atgcctccaaactccattgtcttg	305073	672946	-	-	-
9359	STN2	NM_033104.2	2771	actgcctcaacgttgcactgaat	305081	672950	see also 9358 line	-	-
9360	STN2	NM_033104.2	2773	ttccaagagcttggttcactaatc	305082	672951	see also 9358 line	-	-
9361	MADP-1	NM_033114.2	407	ccatttttttgactgtgataaa	63956	479071	-	-	-
9362	MADP-1	NM_033114.2	477	ggcgaaactctctgataactct	63961	479076	see also 9361 line	-	-
9363	NEK9	NM_033116.3	38	gaactcgcgttcttcactctctg	94733	510278	kinase, related, cell cycle	-	-
9364	NEK9	NM_033116.3	598	ggctcgaagcaaacacttaattc	94747	510284	see also 9363 line	-	-
9365	NEK9	NM_033116.3	1041	atacgaacacagctgaagctcata	94763	510294	see also 9363 line	-	-
9366	NEK9	NM_033116.3	1422	accctcactgaactctctctcc	94773	510306	see also 9363 line	-	-
9367	NEK9	NM_033116.3	1669	ttctctcctcttgaactcaactga	94781	510310	see also 9363 line	-	-
9368	MGC2734	NM_033117.2	178	agaggaacacacacttatgactt	64357	478551	-	-	-
9369	NK01	NM_033119.3	1243	acggagacacacactctctgaag	143111	550821	-	-	-
9370	PLCZ1	NM_033123.2	232	ggcttccactctctctctcttctt	151250	552483	-	-	-
9371	PLCZ1	NM_033123.2	233	ggcttctctctctctctctctt	151251	552484	see also 9370 line	-	-
9372	PLCZ1	NM_033123.2	1920	tgctcgaacacagctctctctctg	151277	552521	see also 9370 line	-	-
9373	RGRPR	NM_033121.1	1404	ttctcagctctctggaactctca	403519	744089	-	-	-
9374	RGRPR	NM_033121.1	1959	ccctctctccagctgtataagc	403527	744097	see also 9373 line	-	-

3375	GRPR	NM_033127.1	1962	tctcttcacgctatgaactctc	403528	744098	see also 9373 line	
3376	ZC5	NM_033127.1	346	aacgcgcacgcctcagctcagc	44201	712881	—	
3377	ZC5	NM_033122.2	1234	aacgcgcacgcctcagctcagc	44204	712882	see also 9376 line	
3378	BC008987	NM_033201.1	632	ctgattctctgaaatcaatgaat	403575	753124	—	
3379	BC008987	NM_033201.1	637	accttcagcagcaaaccaaat	403576	753126	see also 9378 line	
3380	LOC90355	NM_033211.2	772	tgcctactcaatctatgaataa	403590	748505	—	
							channel,	
							receptor_activity,	
							signal_transduction	
3381	GABRG3	NM_033223.1	1412	cttgctttgagatcccttctctct	178778	571998	GABA-A receptor	
3382	PURB	NM_033224.2	865	agccacagcagctgacgctttctg	403620	465069	—	
3383	CSMD1	NM_033225.1	10724	accttcattgtatcaacaattc	202781	745807	—	
3384	ABCC12	NM_033226.1	1072	caactatccgatccctaaatgctct	70122	492169	—	
3385	ABCC12	NM_033226.1	1488	tttccattcttaattgaattgaag	70142	492182	see also 9384 line	
							transcription_regulat	
							or	
3386	PML	NM_033238.1	2334	gacctaacctccgcagaacaatga	9591	463696	—	leukemia(白血病)
3387	BOC	NM_033254.2	2889	cagcaccctccctctctctatttg	22866	774828	—	
3388	BOC	NM_033254.2	2890	agccacccctccctctctctatttg	22867	774827	see also 9387 line	
3389	SLC8A3	NM_033262.3	975	ttccctccagctctctctctctctct	127384	642616	—	
3390	SLC8A3	NM_033262.3	2639	cagacacacccctccctctctctct	12780	642659	see also 9389 line	
3391	SLC8A3	NM_033262.3	2726	tatggcgcacacccccaacacatga	122808	642659	see also 9389 line	
							channel,	
							signal_transduction	
							transcription_regulat	
3392	KONH7	NM_033272.2	1156	tgccttcacactcagctctcaaac	254528	6444382	—	
3393	KONH7	NM_033272.2	1920	tgccttcagcttcagcttcagctcag	254551	644411	see also 9392 line	
3394	LOCS0701	NM_033280.1	601	atggcttcgatctctgtactctaa	191496	584596	peptidase	
3395	LOCS0701	NM_033280.1	602	tgccttcagcttcagcttcactaaa	191497	584597	see also 9394 line	
3396	TP53NP1	NM_033285.2	451	ttctcttgcattctctgacttact	403666	676882	—	
3397	TP53NP1	NM_033285.2	673	cagcttcagcttcacacactcaaac	403669	676884	see also 9386 line	
3398	TP53NP1	NM_033285.2	922	ttccctctccctccatctgctataaa	403681	676890	see also 9386 line	
3399	TP53NP1	NM_033285.2	923	tgcctctccctccagcttcgataaag	403682	676891	see also 9386 line	
							transcription_regulat	
							or	
9400	SOX6	NM_033326.1	855	ctctccctcatgctccactcttttt	11804	468005	transcription factor	
9401	SOX6	NM_033326.1	933	ctctccctcatgctccactctctaaa	11806	468008	see also 9400 line	
9402	SOX6	NM_033326.1	965	aactctccctccgactctctctcttc	11808	468009	see also 9400 line	
9403	SOX6	NM_033326.1	1945	ctctccactctccgactctctctcttc	11828	468020	see also 9400 line	
9404	SOX6	NM_033326.1	1946	ctctccactctccgactctctctcttc	11827	468021	see also 9400 line	
9405	SOX6	NM_033326.1	2209	cacagcagaagcagcttcgctctctc	11835	468025	see also 9400 line	
							structural	
							constituent of	
							cytoskeleton	
9406	CAPPA3	NM_033328.2	746	cagcttcttctcaactctctatctg	113954	695710	—	
9407	CAPPA3	NM_033328.2	749	ctcttcttctcaactctctatctgaa	113955	695712	see also 9406 line	
9408	CAPPA3	NM_033328.2	1033	ctcttcttctcaactctctatctgata	113972	695727	see also 9406 line	

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9409	LHX4	NM_033343.2	1024	tgccacccacacagctgattg	6162	transcription_regulat	transcription factor	short stature, pituitary and cerebellar defects, and small sella turcica (低身長、下垂体および小脳发育不全、小脳工障)
9410	LHX4	NM_033343.3	1025	ggccaccacacagctgattg	6163	445342	445342	
9411	LHX4	NM_033343.3	1036	ggccaccacacagctgattg	6164	445343	see also 9409 line	
9412	LHX4	NM_033343.2	1039	acgttcacacacagctgattg	6165	445344	see also 9409 line	
9413	LHX4	NM_033343.2	1063	acgttcacacacagctgattg	6166	445345	see also 9409 line	
9414	AAT1	NM_033364.2	1950	tgagagagagagagagattg	403753	593464	—	
9415	SSH2	NM_033369.2	278	ctctgaagctggagagcttgc	195990	798236	phosphatase	—
9416	SSH2	NM_033369.2	992	ccggagagctggagagcttgc	196011	798257	see also 9415 line	—
9417	SSH2	NM_033369.2	993	ccggagagctggagagcttgc	196012	798258	see also 9415 line	—
9418	SSH2	NM_033369.2	996	agggagctggagagcttgc	196013	798260	see also 9415 line	—
9419	SSH2	NM_033369.2	1531	atggccacacacagcttgc	196035	798283	see also 9415 line	—
9420	CASPR4	NM_033401.2	3922	tgccatctctctctctctgc	319533	533663	—	—
9421	RWDD2	NM_033411.2	982	ggccacacacacacacacac	192215	585935	phosphatase	—
9422	ZP68	NM_033414.2	1295	acgttcacacacacacacac	50396	473441	—	—
9423	ZP68	NM_033414.2	1302	acgttcacacacacacacac	50399	473442	see also 9422 line	—
9424	KIAA1737	NM_033426.2	1117	acgttcacacacacacacac	403881	784134	—	—
9425	PLJ00007	NM_033449.1	1604	ttctctcctcctcctcctc	404034	790306	—	—
9426	ABCC10	NM_033450.2	2375	ccgttcacacacacacacac	404035	790307	see also 9425 line	—
9427	KIAA1309	NM_033495.1	1981	acgttcacacacacacacac	70026	482123	protein binding	—
9428	LJ2P1	NM_033631.1	690	tgagcgttcacacacacac	180703	715454	—	—
9429	LJ2P1	NM_033631.1	1323	acgttcacacacacacacac	180716	715464	see also 9429 line	—
9431	MID2	NM_052817.1	1522	ctgcacacacacacacacac	157909	558441	—	—
9432	CGO18	NM_052818.1	544	ctgcacacacacacacacac	404256	749062	—	—
9433	SLC26A7	NM_052832.2	399	ggagacacacacacacacac	260211	643756	—	—
9434	BRUNOL6	NM_052840.2	1335	ttcttcacacacacacacac	58220	403665	—	—
9435	MGC20481	NM_052849.2	696	ggagacacacacacacacac	404417	810665	—	—
9436	CRRBL1	NM_052954.1	634	acgttcacacacacacacac	2414	7103684	—	—
9437	MGC20398	NM_052857.1	944	ggagacacacacacacacac	404472	719903	—	—
9438	MGC20398	NM_052857.1	945	ggagacacacacacacacac	404473	719904	see also 9437 line	—
9439	RFT1	NM_052859.2	196	ggagacacacacacacacac	327309	799435	—	—
9440	MGI01465	NM_052875.2	656	ggagacacacacacacacac	133836	672880	—	—
9441	MGI01465	NM_052875.2	983	ggagacacacacacacacac	133845	672889	see also 9440 line	—
9442	MGI01465	NM_052875.2	1003	ggagacacacacacacacac	133846	672890	see also 9440 line	—
9443	SORCS1	NM_052916.2	579	ggagacacacacacacacac	327436	652645	receptor activity	—
9444	SORCS1	NM_052916.2	560	ggagacacacacacacacac	327438	652648	signal transduction	—
9445	SORCS1	NM_052916.2	581	ggagacacacacacacacac	327439	652649	see also 9443 line	—
9446	SORCS1	NM_052916.2	1436	ggagacacacacacacacac	327464	652655	see also 9443 line	—
9447	SORCS1	NM_052916.2	1447	ggagacacacacacacacac	327465	652656	see also 9443 line	—
9448	SORCS1	NM_052916.2	2640	ggagacacacacacacacac	327496	652696	see also 9443 line	—
9449	SORCS1	NM_052916.2	2842	ggagacacacacacacacac	327497	652697	see also 9443 line	—

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9450	SORCSI	NM_052918.2	2846	gcgcctctctactactcaaac	327498	652899	see also 9443 line
9451	SORCSI	NM_052918.2	2847	gcgcctgcctctactcaaac	327499	652700	see also 9443 line
9452	SORCSI	NM_052918.2	3426	gaactcctctctactcaaac	327514	652713	see also 9443 line
9453	LENG8	NM_052925.1	2149	accgaatcctctactactcttc	405331	778163	receptor activity
9454	SLC26A9	NM_052934.2	4718	cagatgcctgcagctactcttgc	260344	643528	-
9455	SLC26A9	NM_052934.2	4881	caggtacacttcctgcctactcgc	260345	643529	see also 9454 line
9456	SLC26A9	NM_052934.2	961	ccacatccctacagcaactgtgt	260351	643534	see also 9454 line
9457	SLC26A9	NM_052934.2	1419	agccctgcctgcctactcaatcca	260357	643538	see also 9454 line
9458	SLC26A9	NM_052934.2	1421	ccctgcctgcctactcaatcca	260358	643539	see also 9454 line
9459	SLC26A9	NM_052934.2	1427	tcgctctcactcactcaaacctcc	260359	643540	see also 9454 line
9460	LOC11529	NM_052937.1	367	accggatgacttaagcaactggt	213683	808099	-
9461	LOC11529	NM_052937.1	379	agtcacaaatggtgccttaatttt	213684	808090	see also 9460 line
9462	LOC11529	NM_052937.1	382	tacaaatggtgccttaattttag	213685	808091	see also 9460 line
9463	MGO8974	NM_052940.3	1081	aggaatttgcctcatgaactcgc	405454	741174	-
9464	NOST1RN	NM_052948.2	618	agaatttgcctcatgaactcgc	405477	806318	-
9465	NOST1RN	NM_052948.2	648	aaccaatgaacccaacatatttc	405478	806320	see also 9464 line
9466	NOST1RN	NM_052948.2	647	accatgaacccaacatatttc	405479	806321	see also 9464 line
9467	WDFY2	NM_052950.2	315	caggaacacttccttttttttaa	160802	557007	-
9468	WDFY2	NM_052950.2	433	aggttcctgccttcagcaactct	160807	557009	see also 9467 line
9469	WDFY2	NM_052950.2	652	gccttcctgccttcagcaactct	160812	557015	see also 9467 line
9470	WDFY2	NM_052950.2	654	ctcagcttcctgccttcagcaact	160813	557016	see also 9467 line
9471	WDFY2	NM_052950.2	838	cagatcaacttcctgccttcagca	160817	557021	see also 9467 line
9472	PANX3	NM_052950.2	831	agcaataacccaactatttcttc	327103	773988	-
9473	HSD17B	NM_052970.3	941	cagagatgcctgccttcctacccc	85121	503817	-
9474	USP3A	NM_052985.2	604	ggctcctctcttccatgaatttc	313865	768805	-
9475	TRAP1US	NM_053002.2	873	cagatctcagatgccttccttcc	405625	799728	-
9476	TRAP1US	NM_053002.2	1117	tggtttgcctgccttccttgccttc	405629	799733	see also 9475 line
9477	TRAP1US	NM_053002.2	1268	gggttcgaacccgccttccttccttc	405630	799736	see also 9475 line
9478	TRAP1US	NM_053002.2	1290	cagcaagcttcgggcgaaggaattta	405632	799737	see also 9475 line
9479	TRAP1US	NM_053002.2	1291	accagcttcgggcgaaggaatttat	405633	799738	see also 9475 line
9480	HCCA2	NM_053005.2	234	accacataacctcgcctgccttcgc	405763	733960	-
9481	PALM2	NM_053016.1	668	tggttcaccaagatgctgataagc	405783	780087	-
9482	PALM2	NM_053016.1	1262	ctgttcacttcctgtttcttcattgt	405797	780095	see also 9481 line
9483	PFN2	NM_053024.1	370	tcctatcgacgcagatgataaag	118743	523557	phosphatidylinositol
9484	PFN2	NM_053024.1	373	atgacgcagctgataaagaag	118744	523558	1-4, 5-bisphosphate
9485	MYLK	NM_053025.1	695	cuectactcctcaggaacttccttc	92483	509129	kinase-related
9486	STAF42	NM_053053.2	66	ggagagacttccttccttccttcct	405909	741979	-
9487	STAF42	NM_053053.2	407	agtcacacttcgaacttccttccttc	405920	741980	see also 9486 line
9488	CA1SPER	NM_053054.2	2023	agtcgccttccttccttccttccttc	282608	646196	-
9489	CLC6	NM_053277.1	2015	aagaggttgataacgcgaatttcca	263549	647166	channel
9490	DACH2	NM_053281.2	267	ctgcctgcgcgaacttccttccttc	310586	676534	transcription_regulat

Accession	Gene	Protein	Function	Location	Reference
9491	DACH2	NM_052281.2	1745	tcacgaagtaactactactctt	310610 676560 see also 9490 line
9492	DACH2	NM_052281.2	1748	agaggaagtaactactactctt	310611 676561 see also 9490 line
9493	DACH2	NM_052281.2	1749	agaggaagtaactactactctt	310612 676562 see also 9490 line
9494	EAT2	NM_052282.1	255	taacgaactcttcgaagaaca	279601 681001
9495	TEKT1	NM_052285.1	303	aaggctttagatgaacaactga	292413 692202
9496	TEKT1	NM_052285.1	602	cgcctctccgaactgaactcttg	292418 692207 see also 9495 line
9497	CAT SPER	NM_054020.2	1233	atgtctactcttcctgaactat	262625 646241 channel
9498	CAT SPER	NM_054020.2	1234	tggtctactcttcctgaactat	262626 646242 see also 9497 line
9499	ANKH	NM_054027.3	809	tgctcaactctcagctctcatg	280025 654095
9500	LOCI1756	NM_051778.2	365	ctctctggaactgaagaataatt	30724 432916
9501	TM1S2	NM_05179.1	489	gcgaaggaactgaagaataatt	43201 449741
9502	TEC1B	NM_058222.1	433	aacgaaggaactgaagaataatt	409231 659886
9503	TEC1B	NM_058222.1	785	taacgaactctcagctctcatg	408238 659897 see also 9502 line
9504	KIAA1692	NM_058227.1	1792	ttcacaaggaactctcattctt	408307 737552
9505	WN17B	NM_058238.1	259	agccgcctggaactctggaatt	235508 639708
9506	TIAF1	NM_07847.12	999	gagatgcactgcttggaactaat	17674 509409 phosphatase
9507	TIAF1	NM_07847.12	3496	agctctctatccgcgaactctaac	17690 509432 see also 9506 line
9508	SLC38A1	NM_07847.12	3792	ccgcgaactctcgaagaaga	17694 509435 see also 9506 line
9509	SCAMP-4	NM_078483.1	1118	cttggtctgcctgaatttgagc	259642 641848
9510	SCAMP-4	NM_078934.1	199	attctacagcttggaacttgta	406381 708698
9511	SCAMP-4	NM_078934.1	371	tcgcgcgcgaactctcttaatt	406383 708702 see also 9510 line
9512	SCAMP-4	NM_078934.1	372	cgcgaacgaagactccttaatt	406384 708703 see also 9510 line
9513	SCA9	NM_080283.2	2433	agagatctctatgactcttaa	69388 491593
9514	VPS18	NM_080432.1	536	taacgtctcgcctgacttgactg	271307 772112
9515	93GAAL76	NM_080605.2	820	cttccacactctgcgaactaac	210043 599083
9516	CBLN1L1	NM_080817.3	404	tcagatcttacttgacttgaaat	405456 730201
9517	MGCI7337	NM_080655.1	299	agctctgcgcgaacaaataatt	406531 732719 see also 9517 line
9518	MGCI7337	NM_080655.1	300	agctctgcgcgaacaaataattg	406532 732719 see also 9517 line
9519	MGCI7337	NM_080655.1	301	agctctgcgcgaacaaataattg	273954 656301
9520	MGCS564	NM_080669.2	344	ccacagcgaactcctatcaaac	275187 540945
9521	STL4	NM_080737.1	1874	agcttcgcgaacaaagaggaag	327348 693521
9522	TM2C	NM_080751.1	727	atctctctcgaacttgatctg	327349 693522 see also 9522 line
9523	TM2C	NM_080751.1	738	atgagatctatgagtaaccttg	327349 693522 see also 9522 line
9524	TM2C	NM_080751.1	739	tggaatcttggaactaacctctg	327350 693523 see also 9522 line
9525	GPCR2	NM_080817.1	338	ttccataagccgctgctaacac	240302 625193
9526	GPCR2	NM_080817.1	345	agccgcctggaactgaactaac	240303 625194 see also 9525 line
9527	GPCR2	NM_080817.1	614	ttggaacaaactcttgactctt	240315 625209 see also 9525 line
9528	PABPC5	NM_080832.1	1107	atgccacaaactcttggaactg	53176 485321
9529	STK35	NM_080836.2	231	cttccatctacacgctgcttgctg	101741 488238 kinase related

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9530	STRK35	NM_080636.2	232	ggcagctacggcctgattatga	101742	438239	see also 9529 line	
9531	STRK35	NM_080636.2	234	cagcttcgcgctgattatgaag	101743	438240	see also 9529 line	
9532	SOCS7	NM_080687.2	863	aggttgcaattatataacagaca	310278	676387		SH3-domain
9533	UNC5D	NM_080672.1	490	ctctgtgcattatgacctattac	293608	638522	signal transduction	
9534	UNC5D	NM_080672.1	501	tgcactattaggaacaacttt	293609	638523	see also 9533 line	
9535	UNC5D	NM_080672.1	502	agcctctataggaacaacttt	293610	638524	see also 9533 line	
9536	UNC5D	NM_080672.1	1168	tgcacagcactctctcttact	293619	639533	see also 9533 line	
9537	UNC5D	NM_080672.1	1698	agcctctataggaacaacttt	293628	639541	see also 9533 line	
9538	UNC5D	NM_080672.1	1700	agcctctataggaacaacttt	293629	639542	see also 9533 line	
9539	UNC5D	NM_080672.1	2523	aaagcaaacacacactctcttc	293835	639548	see also 9533 line	
9540	UNC5D	NM_080672.1	2578	aaagcaaacacacactctcttc	293836	639549	see also 9533 line	
9541	DISP19	NM_080672.1	369	agcctctataggaacaacttt	192896	534831	phosphatase	
9542	ESDN	NM_080672.2	389	agcctctataggaacaacttt	319005	683035		
9543	ASB15	NM_080628.2	1032	tgcacagcactctctcttact	315451	435008		
9544	ASB12	NM_130086.2	368	ctgagctgctctctctctctct	408896	746918		
9545	UBE3B	NM_130466.2	3329	ccgagtgatgacgaactctct	231467	616715		
9546	JDP2	NM_130468.2	487	ccgagtgatgacgaactctct	29143	460714	transcription, regulat	
9547	CAOH-1	NM_130767.1	1597	tgtgtgctgtgcaaatccttt	199881	736298	or	
9548	CAOH-1	NM_130767.1	1598	tgtgtgctgtgcaaatccttt	199892	736299	see also 9547 line	
9549	RG33	NM_130795.1	1281	ctgtgttcctgtcggaacatcg	255015	639521	signal transduction	
9550	GREAT	NM_130806.2	908	ctgtgttcctgtcggaacatcg	255015	639521	gpcr	
9551	GREAT	NM_130806.2	969	tgcctagaatcaaatgttttt	240458	623240	receptor activity	
9552	GREAT	NM_130806.2	969	tgcctagaatcaaatgttttt	240459	623241	signal transduction	
9553	GREAT	NM_130806.2	970	tgcctagaatcaaatgttttt	240460	623242	see also 9550 line	
9554	GREAT	NM_130806.2	1452	ctctgcctgtctcactcaaatg	240476	623262	see also 9550 line	
9555	DX1C1	NM_130810.1	1494	tctctcctgcagattcttgt	407036	723916		
9556	PNL3	NM_130891.1	307	ccgagcagccgcgattctcttg	130777	534677		
9557	LPBPC	NM_132562.1	269	tgtccgcagctattctcaatg	234788	729064		
9558	LPBPC	NM_132562.1	1470	tgtccgcagctattctcaatg	281844	733412		
9559	LPBPC	NM_132562.2	2482	aaagtggaattgaacacrttaa	281978	733444	see also 9557 line	
9560	LPBPC	NM_132569.2	3395	aaagtggaattgaacacrttaa	281978	733444	see also 9557 line	
9561	LPBPC	NM_132569.2	3396	cgcgaattgagcgagatttttt	281901	733470	see also 9557 line	
9562	WIRE	NM_132569.2	3395	aaagtggaattgaacacrttaa	281902	733471	see also 9557 line	
9563	GSH-2	NM_133267.1	649	caagagacaacattctgcacag	407167	810640	transcription, regulat	
9564	KONG-3	NM_133329.4	872	ctctcttcacacgaagatgctc	4520	444442	or	
9565	KONG-3	NM_133329.4	1886	tctctcttcacacgaagatgctc	260995	536485	transcription factor	
9566	YT521	NM_133370.1	1622	ctctcttcacacgaagatgctc	325103	536493	see also 9564 line	
9567	YT521	NM_133370.1	1623	ctctcttcacacgaagatgctc	325133	797848		
9568	YT521	NM_133370.1	1883	aaagctcttcacacgaagatgctc	325134	797849	see also 9566 line	
9569	YT521	NM_133370.1	1883	aaagctcttcacacgaagatgctc	325141	797859	see also 9566 line	

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9569	YTS21	NM_133701.1	1886	gcctccacacagagattctgata	325142	707861	see also 9568 line
9570	YTS21	NM_133701.1	1888	ctccacacacagagattctgata	325143	707862	see also 9568 line
9571	YTS21	NM_133701.1	2015	agagctccacacagagattctgata	325147	707866	see also 9568 line
9572	YTS21	NM_133701.1	2020	tcgcgcacacacagagattctgata	325149	707867	see also 9568 line
9573	DN3	NM_133433.1	6868	tcgcgcacacacagagattctgata	407200	812593	cell cycle
9574	DN3	NM_133433.1	6884	tcgcgcacacacagagattctgata	407202	812594	see also 9573 line
9575	DN3	NM_133433.1	7072	tcgcgcacacacagagattctgata	407206	812597	see also 9573 line
9576	DN3	NM_133433.1	7073	tcgcgcacacacagagattctgata	407207	812598	see also 9573 line
9577	DN3	NM_133433.1	7092	agagctccacacacagagattctgata	407208	812600	see also 9573 line
9578	GP22	NM_133443.1	326	gcgcgcacacacagagattctgata	218203	606118	transcription_regulat
9579	EMU1	NM_133455.1	1133	tcacccacacacacagagattctgata	407216	535110	or
9580	EMU1	NM_133455.1	1178	accacacacacacacagagattctgata	407218	535113	see also 9579 line
9581	TTG14	NM_133462.1	517	atgagctccacacacagagattctgata	55565	472747	—
9582	TTG14	NM_133462.1	656	tcgcgcacacacacagagattctgata	55576	472752	see also 9581 line
9583	TTG14	NM_133462.1	936	agagctccacacacacagagattctgata	55589	472768	see also 9581 line
9584	TTG14	NM_133462.1	1290	tcgcgcacacacacacagagattctgata	55597	472785	see also 9581 line
9585	BMPER	NM_133468.2	559	ccacacacacacacacacagagattctgata	138178	734700	—
9586	BMPER	NM_133468.2	797	agagctccacacacacacacagagattctgata	138181	734703	see also 9585 line
9587	BMPER	NM_133468.2	2137	gcgcgcacacacacacacacagagattctgata	138216	734739	see also 9585 line
9588	CD109	NM_133493.1	1873	tcgcgcacacacacacacacagagattctgata	293948	663379	—
9589	NEK7	NM_133494.1	616	ccacacacacacacacacacagagattctgata	94705	510248	kinase_related
9590	DOX1	NM_133497.1	2087	ctccacacacacacacacacacagagattctgata	80866	500883	—
9591	CLYBL	NM_138260.2	524	ccgcacacacacacacacacacagagattctgata	218602	603817	—
9592	CLYBL	NM_138260.2	524	ccgcacacacacacacacacacagagattctgata	407444	765007	—
9593	RPB9	NM_138290.1	548	ccgcacacacacacacacacacagagattctgata	407452	813821	—
9594	RPB9	NM_138290.1	753	gcgcgcacacacacacacacacagagattctgata	407463	813825	see also 9593 line
9595	RPB9	NM_138290.1	755	gcgcgcacacacacacacacacagagattctgata	407464	813828	see also 9593 line
9596	PANK1	NM_138316.2	714	accctatctctctctctctctctgata	95591	511200	channel,
9597	KCNK10	NM_138317.1	214	tcacacacacacacacacacacacagagattctgata	261287	644887	signal transduction
9598	RHBDL4	NM_138328.1	460	accgcacacacacacacacacacacagagattctgata	152052	553022	serine-type
9599	SBSD54	NM_138334.1	220	gcgcacacacacacacacacacacagagattctgata	407527	716042	endopeptidase
9600	GNPDA2	NM_138335.1	170	gcgcgcacacacacacacacacacagagattctgata	234833	619564	—
9601	GNPDA2	NM_138335.1	279	ccgcgcacacacacacacacacacagagattctgata	234839	619567	see also 9600 line
9602	ABHD3	NM_138340.3	508	ccgcgcacacacacacacacacacagagattctgata	235735	595055	—
9603	ABHD3	NM_138340.3	1216	tcgcgcacacacacacacacacacagagattctgata	235755	595073	see also 9602 line
9604	LOC91768	NM_138375.1	791	agagacacacacacacacacacacagagattctgata	308255	533141	—
9605	LOC92689	NM_138388.1	602	tcgcgcacacacacacacacacacagagattctgata	407888	726110	—
9606	LOC92689	NM_138388.1	1312	gcgcgcacacacacacacacacacagagattctgata	407900	726723	see also 9605 line
9607	LOC92689	NM_138388.1	1314	ccgcgcacacacacacacacacacagagattctgata	407901	726723	see also 9605 line
9608	LOC92689	NM_138388.1	1316	ccgcgcacacacacacacacacacagagattctgata	407902	726724	see also 9605 line
9609	OTD37	NM_138391.3	546	tcgcgcacacacacacacacacacagagattctgata	407935	710705	—

Alzheimer disease(アルツハイマー病)

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9610	GIr37	NM_138391.3	547	cccttcctgaagcattctgaatt	407936	710706	see also 9609 line
9611	LOC92906	NM_138394.2	553	tggacaatgatgattctgctga	63866	479133	-
9612	LOC92906	NM_138394.2	553	ctgattctgcacacaaatt	63906	479150	see also 9611 line
9613	LOC92906	NM_138394.2	951	ctctcaaaattctgaatt	63909	479154	see also 9611 line
9614	LOC92906	NM_138394.2	951	tctctcaaaattctgaatt	63910	479155	see also 9611 line
9615	LOC92935	NM_138395.1	948	ccctctctctctctgaattg	87320	468789	-
9616	LOC92935	NM_138395.1	960	tgtgtgaagcattctcaattg	87321	468789	see also 9615 line
9617	CKLFSF7	NM_138410.2	854	ctgctgcctgcctgcctgctg	328518	845426	-
9618	H63	NM_138423.2	811	atgcagagatgcagctgctg	408076	792500	-
9619	H63	NM_138423.2	1406	ctgcagagatgcagctgctg	408097	792331	see also 9618 line
9620	H63	NM_138423.2	1448	tccgcagagatgcagctgctg	408098	792334	see also 9618 line
9621	H63	NM_138423.2	1481	ggctgcagctgcctcaattg	408099	792335	see also 9618 line
9622	FOX4	NM_138458.1	2053	atgcagagcgcgcgaagatg	4256	444263	or transcription_regulat
9623	LOC11614	NM_138458.1	959	tccagctgcgaagaagattct	88576	493575	-
9624	LOC13002	NM_138468.3	794	tggagctgctgcgaattgctg	408331	729283	-
9625	LOC13002	NM_138468.3	797	agctgctgctgcgaattgctg	408332	729284	see also 9624 line
9626	SP1	NM_138473.2	1678	agcttcacgaacattaaacctg	40667	704731	-
9627	SP1	NM_138473.2	2420	ctgcaattcaatttaattgctg	40676	704746	see also 9626 line
9628	TMCI	NM_138891.2	1380	ggagattatgctgaattgctg	313824	678691	-
9629	TMCI	NM_138891.2	2267	acgtctgcctgctgctgctg	313849	678722	see also 9628 line
9630	LOC91137	NM_138773.1	1042	tgtcttcacgttcttcttctg	180687	573364	-
9631	SYTL5	NM_138780.1	325	atctgcacgttcgaagctgctg	265834	649702	-
9632	SYTL5	NM_138780.1	1183	tacacgttcgaagctgctgctg	265850	649730	see also 9631 line
9633	SYTL5	NM_138780.1	1328	caatgcttctctcaattctgctg	265852	649733	see also 9631 line
9634	SYTL5	NM_138780.1	1378	agcttcgaagcttcgaattctg	265854	649735	see also 9631 line
9635	SYTL5	NM_138780.1	1379	agcttcgaagcttcgaattctg	265855	649736	see also 9631 line
9636	LOC12964	NM_138798.2	253	tgtgttcgaagcttcgaattctg	408912	720899	-
9637	LOC12964	NM_138798.2	348	tgtgttcgaagcttcgaattctg	408917	720904	see also 9638 line
9638	LOC12964	NM_138798.2	356	tgtgttcgaagcttcgaattctg	408918	720908	see also 9638 line
9639	LOC12964	NM_138798.2	1077	ctgtgttcgaagcttcgaattctg	408950	720939	see also 9638 line
9640	LOC13061	NM_138807.1	492	agattcttcgaagcttcgaattctg	281389	666534	-
9641	C7orf31	NM_138811.3	1437	ccctcttcgaagcttcgaattctg	409162	655427	-
9642	VAVGL1	NM_138859.1	1030	cacacagattcttcgaattctg	328052	796648	-
9643	MS2	NM_138862.2	1010	tccgtgttcgaagcttcgaattctg	64713	472439	see also 9643 line
9644	MS2	NM_138862.2	1050	tgtgttcgaagcttcgaattctg	64716	472441	see also 9643 line
9645	MS2	NM_138862.2	1125	ccagcttcgaagcttcgaattctg	64716	472442	see also 9643 line
9646	MS2	NM_138862.2	1133	ccagcttcgaagcttcgaattctg	409296	755268	-
9647	NETO1	NM_138866.2	791	accagcttcgaagcttcgaattctg	184855	579111	-
9648	ADAMTS1	NM_139054.2	2651	tccagcttcgaagcttcgaattctg	184861	579114	see also 9648 line
9649	ADAMTS1	NM_139054.2	2769	tccagcttcgaagcttcgaattctg	184770	579064	-
9650	ADAMTS1	NM_139056.1	2112	ctcagagcttcgaagcttcgaattctg	184771	579065	see also 9650 line
9651	ADAMTS1	NM_139056.1	2113	tccagagcttcgaagcttcgaattctg	184771	579065	see also 9650 line
9652	ADAMTS1	NM_139056.1	2114	cggagagcttcgaagcttcgaattctg	184772	579066	see also 9650 line

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9653	ADAMTS1	NM_139056.1	2121	1aaccatgaattatataatg	184773	579059	see also 9650 line	lysencephaly with ambiguous genitalia(外性器不 発達併発する乳頭症、infantile spasm(点頭てん かん)、mental retardation(精神遅滞)、Pettington syndrome(バーティントン病)、myoclonic epilepsy with mental retardation(精神遅滞に伴うミオク ローナス癫痫)
9654	ADAMTS1	NM_139056.1	2122	agccctaaattttatataatg	184774	579060	see also 9650 line	
9655	ARX	NM_139058.1	462	ggccctggagacagctcaagctca	1084	441830	transcription_regulat or	
9656	CSNK1D	NM_139062.1	1511	cagaatgaattctcttcgacata	77064	498331	kinase_related、 signal transduction	casein kinase I
9657	DNER	NM_139072.2	1220	cgcgagctgattatgacaaatg	141973	547337	-	-
9658	DNER	NM_139072.2	1301	tgcgagctccagatggttaact	141974	547341	see also 9657 line	-
9659	DNER	NM_139072.2	2314	aacccctgctcaacagttgtaact	141993	547357	see also 9657 line	-
9660	PP1L4	NM_139126.2	508	gtgtttatgattgctccattga	84995	485450	-	-
9661	PP1L4	NM_139126.2	527	tgtgtgacctctcgttattga	84996	485451	-	-
9662	PPP9	NM_139156.2	521	gcccaagactccagttgtgctg	187142	550755	see also 9660 line	-
9663	SGO2	NM_139167.1	90	etgcacagagctgactatact	409386	540331	-	-
9664	SGO2	NM_139167.1	92	ggcgaagagctgactatact	409387	540332	see also 9663 line	-
9665	SGO2	NM_139167.1	97	aaagagctctatactcttctg	409388	540334	see also 9663 line	-
9666	SGO2	NM_139167.1	99	gaagctgatactctcttctg	409389	540335	see also 9663 line	-
9667	SGO2	NM_139167.1	124	ctcctgtttgatactatact	409390	540338	see also 9663 line	-
9668	SGO2	NM_139167.1	153	agccatgacaaatgatactga	409392	540339	see also 9663 line	-
9669	SGO2	NM_139167.1	228	ggaaatcctgaatgaatgaatg	409394	540342	see also 9663 line	-
9670	SGO2	NM_139167.1	232	atgcgactgaatgaatgaatg	409395	540343	see also 9663 line	-
9671	SGO2	NM_139167.1	234	ccaaactgaatgaatgatactg	409396	540344	see also 9663 line	-
9672	SFRS12	NM_139168.1	653	gcacacacgtttttttttttg	65930	481250	-	-
9673	SFRS12	NM_139168.1	758	tccacacacgataatgaacac	65934	481252	see also 9672 line	-
9674	SFRS12	NM_139168.1	758	tccacacacgataatgaacac	65935	481253	see also 9672 line	-
9675	SFRS12	NM_139168.1	990	ccagagatgatacctcattatg	65938	481256	see also 9672 line	-
9676	FGD4	NM_139241.1	1107	tatgtatgattttttttttgcaa	156860	557797	-	-
9677	FGD4	NM_139241.1	1587	agccattcatatgataatgaag	156872	557812	see also 9676 line	-
9678	FGD4	NM_139241.1	1587	gcactctaatgataatgaatg	156873	557813	see also 9676 line	-
9679	FGD4	NM_139241.1	2324	gagattgaatgaatgaatgatac	156887	557829	see also 9676 line	-
9680	Terr	NM_139243.1	1178	aaagattgaatgaatgaatgatac	48918	472249	-	-
9681	Terr	NM_139243.1	1529	tagtcaacagacccctctattgt	48931	472265	see also 9680 line	-
9682	PPM1L	NM_139245.1	351	agcagagacacactttttttgtg	231719	558423	-	-
9683	LOC15842	NM_139246.3	1138	tccctgctgactgctgacaaaa	409594	782683	-	-
9684	LOC15842	NM_139246.3	1139	tccctgctgactgctgacaaaa	409595	782684	see also 9683 line	-
9685	LOC15842	NM_139246.3	1140	ccctctactactgctgacaaaa	409596	782685	see also 9683 line	-
9686	TA-WDRP	NM_139281.1	977	aaagattgaatgaatgaatgaatg	237369	754427	-	-
9687	TA-PP2C	NM_139283.1	1040	caactcttgaacagttgcctgt	237344	821288	-	-
9688	KCNH5	NM_139318.3	109	atcagagacacccagatgaatg	121485	598795	channel、 signal transduction	-
9689	KCNH5	NM_139318.3	1056	tatgaaacagctgacattactgag	121532	598835	see also 9688 line	-

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9690	KOH5	NM_139316.3	1335	aagccttcaacacatgagttgc	121544	596538	see also 9688 line
9691	KOH5	NM_139316.3	1742	aggatctcaacacatctccgtc	121548	596551	see also 9688 line
9692	KOH5	NM_139316.3	2661	ctccagatctccgtctgataagc	121570	596567	see also 9688 line
9693	CNOT6L	NM_144571.1	98	ctccagatctccgtcaganttat	409771	754693	-
9694	CNOT6L	NM_144571.1	536	ctccagatctccgtctgagttgc	409787	754691	see also 9693 line
9695	CNOT6L	NM_144571.1	544	ttccagcttatgtcttcacagt	409788	754692	see also 9693 line
9696	CNOT6L	NM_144571.1	873	ttccagcttatgtcttcacagt	409791	754696	see also 9693 line
9697	CNOT6L	NM_144571.1	1066	ttggaccacagatctctgattc	409800	754607	see also 9693 line
9698	CNOT6L	NM_144571.1	1282	ttggaccacacaaagacttc	409808	754814	see also 9693 line
9699	CNOT6L	NM_144571.1	1301	atgagctgttatgaactctgac	409810	754817	see also 9693 line
9700	CNOT6L	NM_144571.1	1373	aaactaaagcgcctatgaacat	409813	754818	see also 9693 line
9701	CNOT6L	NM_144571.1	1380	ttgctgctcctgaacaaacttga	409814	754919	see also 9693 line
9702	WD20	NM_144574.2	711	agggcctcaacagagttctgttc	409873	730322	-
9703	WD20	NM_144574.2	1183	ctgttttttggaccacacagaag	409881	730338	see also 9702 line
9704	WD20	NM_144574.2	1598	atgaagaagcttcctgttgaga	409897	730351	see also 9702 line
9705	SFXN5	NM_144579.1	755	ctgtgaccagtcgcaatcttcc	266773	653889	-
9706	ATP6V1C2	NM_144593.1	47	ccctatgacaaagaagaatttgc	73330	494912	-
9707	RHEB1	NM_144593.1	315	tcctaaagctgaagaatactaga	110632	518083	signal transduction
9708	RHEB1	NM_144593.1	111	ctgaagctctgcccactctatcca	410125	739523	see also 9707 line
9709	TTC8	NM_144598.1	531	ctgaagctccactatataattta	410139	739536	see also 9709 line
9710	TTC8	NM_144598.1	493	tgactgaactctgtttgactaat	410178	785921	-
9711	MGC24976	NM_144598.2	493	agctcctctctgtttgactaat	410179	785922	-
9712	MGC24976	NM_144598.2	494	ttcactctctgtttgactaat	410180	785923	see also 9711 line
9713	MGC24976	NM_144598.2	498	ttcagagctgtgtgtgttgagtc	410181	785925	see also 9711 line
9714	MGC24976	NM_144598.2	536	ttcagagctgtgtgtgttgagtc	410251	795937	-
9715	BHD	NM_144606.3	1032	accgagatcctcatctacacctc	410371	774951	-
9716	MGC29891	NM_144615.1	1212	ttggcagcagcttatgtgaact	52349	473965	knase related
9717	RIS	NM_144624.1	957	ttggcagcagcttatgtgaact	52354	473968	see also 9717 line
9718	RIS	NM_144624.1	1049	ggcaatctggcagcactcttcta	52356	473969	see also 9717 line
9719	RIS	NM_144624.1	1076	ttcttttgcctctcatattgag	410542	714809	-
9720	O20orf140	NM_144628.1	1056	acggcagcctctctctccaaga	410546	714812	see also 9720 line
9721	O20orf140	NM_144628.1	1184	aagcaccacacgctttgtgaact	410591	787883	see also 9722 line
9722	ZNF513	NM_144631.2	365	aatctggcagctgaagcttggag	410596	787881	-
9723	ZNF513	NM_144631.2	1501	gttgacaccttgccctctacacag	410591	787883	see also 9722 line
9724	MGC26610	NM_144647.2	405	ttggaataatgaacttaactgaat	148236	542760	-
9725	FJ33069	NM_144648.1	467	atcttggcagctgaagcttgcct	410822	775029	-
9726	B7BD14A	NM_144653.2	428	arccactctgtctgtcatctacgt	29339	530568	-
9727	SAMD8	NM_144660.1	865	caatgtactaaagaatactatgc	411101	723459	-
9728	OTOA	NM_144672.2	791	tcactgttctactctcgttttgc	411248	693909	-
9729	OTOA	NM_144672.2	794	atgttctactctactctgttgaag	411249	693910	see also 9728 line
9730	TON1L2	NM_144673.2	1256	atctctcactcctgagatctgagc	102743	650207	-
9731	G20orf40	NM_144703.1	899	ttccactcaacagctgaaggaacac	411498	798954	-
9732	G20orf40	NM_144703.1	899	ttccactcaacagctgaaggaacac	411499	798955	see also 9731 line
9733	FJ25200	NM_144715.2	2321	tgtgtgttccaccactctgctct	149817	543069	-

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9734	LOC15218	NM_144718.2	636	agcgcagcagcttccaaact	411695	753499	-	-	-
9735	LOC15218	NM_144718.2	1390	ctccctatttcgctctctaa	411711	753506	see also 9734 line	-	-
9736	LOC15218	NM_144718.2	1391	tccctatttcgctctctaa	411712	753507	see also 9734 line	-	-
9737	LOC15218	NM_144718.2	1392	ctccctatttcgctctctaa	411713	753508	see also 9734 line	-	-
9738	LOC15218	NM_144718.2	1396	tgtctatttcgctctctaa	411714	753509	see also 9734 line	-	-
9739	FLJ31564	NM_144720.1	2221	aaagctctctctctctctct	411789	801420	-	-	-
9740	FLJ31564	NM_144720.1	2240	gaagctctctctctctctct	411790	801421	see also 9739 line	-	-
9741	FLJ31564	NM_144720.1	2242	gaagctctctctctctctct	411791	801422	see also 9739 line	-	-
9742	FLJ31564	NM_144720.1	2242	gaagctctctctctctctct	411792	801423	see also 9739 line	-	-
9743	FLJ31564	NM_144720.1	2281	ctctcaagcagcagcagcagc	411793	801424	see also 9739 line	-	-
9744	FLJ3121	NM_144723.1	22	cgcgcagcagcagcagcagc	51743	717431	-	-	-
9745	FLJ3121	NM_144723.1	51	ggcgcagcagcagcagcagc	51744	717432	see also 9744 line	-	-
9746	FLJ3121	NM_144723.1	51	cgcgcagcagcagcagcagc	51746	717433	see also 9744 line	-	-
9747	FLJ31455	NM_144864.1	439	aaactctcagcagcagcagc	145882	542922	-	-	-
9748	ZDHHC15	NM_144868.1	79	ctgctcagcagcagcagcagc	412012	788460	-	-	-
9749	ZDHHC15	NM_144868.1	628	accactctctctctctctct	412022	788493	see also 9748 line	-	-
9750	ZDHHC15	NM_144868.1	899	ttcctctctctctctctctct	412029	788498	see also 9748 line	-	-
9751	MGC39350	NM_144970.1	401	atgctctctctctctctctct	412034	785729	-	-	-
9752	MGC39350	NM_144970.1	415	ctcttttaagctctctctct	412035	785741	see also 9751 line	-	-
9753	MGC39350	NM_144970.1	533	atgctctctctctctctctct	412041	785743	see also 9751 line	-	-
9754	MGC24039	NM_144973.2	509	atgctctctctctctctctct	412059	793936	-	-	-
9755	MGC24039	NM_144973.2	510	tgtctctctctctctctctct	412060	793937	see also 9754 line	-	-
9756	MGC24039	NM_144973.2	513	ttctctctctctctctctctct	412061	793938	see also 9754 line	-	-
9757	MGC24039	NM_144973.2	551	aaatctctctctctctctctct	412062	793939	see also 9754 line	-	-
9758	MGC24039	NM_144973.2	1318	agctctctctctctctctctct	412090	793957	see also 9754 line	-	-
9759	MGC24039	NM_144973.2	1895	tgctctctctctctctctctct	412110	793975	see also 9754 line	-	-
9760	MGC24039	NM_144973.2	2191	agcgcagcagcagcagcagc	412118	793980	see also 9754 line	-	-
9761	UG27044	NM_144977.1	422	aaatctctctctctctctctct	412173	809192	-	-	-
9762	UG27044	NM_144977.1	425	ctgctctctctctctctctct	67079	487073	-	-	-
9763	UG27044	NM_144977.1	60	gaagctctctctctctctctct	67080	487015	see also 9762 line	-	-
9764	UG27044	NM_144977.1	60	gaagctctctctctctctctct	67080	487015	see also 9762 line	-	-
9765	C10orf9	NM_145012.3	223	atctctctctctctctctctct	308111	674694	-	-	-
9766	C10orf9	NM_145012.3	224	ttctctctctctctctctctct	308112	674695	see also 9764 line	-	-
9767	C10orf9	NM_145012.3	227	ttctctctctctctctctctct	308113	674696	see also 9764 line	-	-
9768	MGC33887	NM_145036.1	1622	aaagcagctctctctctctct	413059	793840	-	-	-
9769	MGC33887	NM_145036.1	1754	ttctctctctctctctctctct	413063	793787	see also 9767 line	-	-
9770	C13orf3	NM_145055.1	289	aaatctctctctctctctctct	413313	802706	-	-	-
9771	C13orf3	NM_145062.1	307	aaatctctctctctctctctct	413378	813449	-	-	-
9772	C6orf13	NM_145062.1	300	agctctctctctctctctctct	413407	793713	-	-	-
9773	C6orf13	NM_145062.1	1880	ttctctctctctctctctctct	413454	793791	see also 9771 line	-	-
9774	MGC2783	NM_145064.1	952	gtgctctctctctctctctct	316743	680165	-	-	-
9775	TRPV3	NM_145068.2	599	gtgctctctctctctctctct	252295	646806	receptor, activity, channel	-	-
9776	NSE1	NM_145080.2	267	ttctctctctctctctctctct	265563	647737	-	-	-
9778	NSE1	NM_145175.1	331	gtgctctctctctctctctct	413754	797803	-	-	-

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9777	NSE1	NM_145176.1	334	tcggaggttgctctctctc	413755	737804	see also 9778 line	—	—
9778	SLC2A12	NM_145176.1	287	ctctctggtgtatataacttgc	258959	643286	—	—	—
9779	CABP4	NM_145200.1	711	ccatctgctctccagatgattga	138463	544678	signal transduction	calcium ion binding	—
9780	SPATA5	NM_145201.1	1365	caactacagacacactcaacta	101084	515144	—	—	—
9781	SPATA5	NM_145201.1	1367	ctctacagacacactcaatttt	101085	515145	see also 9780 line	—	—
9782	SPATA5	NM_145201.1	1920	accactcattctcccaattgat	101089	515167	see also 9780 line	—	—
9783	LOC11570	NM_145245.2	229	aggtccatctgctctccatgaatg	88545	655850	signal transduction	—	—
9784	LOC12449	NM_145254.1	352	ttgctctctctgctccactcaat	413913	718623	—	—	—
9785	LOC12449	NM_145254.1	354	ttgctctctctgctccactcaatg	413914	718624	see also 9784 line	—	—
9786	LOC51319	NM_145280.3	535	ttctctgctctggtggacaaattt	414121	720414	—	—	—
9787	LOC51319	NM_145280.3	536	ttctctgctctggtggacaaattg	414122	720415	see also 9786 line	—	—
9788	LOC19809	NM_145284.3	1113	ccgtatcctgctctcaatctatg	414147	741661	—	—	—
9789	LACET1	NM_145315.2	1210	acctctgctccgctccacttga	414399	758078	—	—	—
9790	MGC21654	NM_145647.1	1647	ttgctctctctatcaatctg	414548	816487	—	—	—
9791	SL01544	NM_145648.1	1044	tacctctctgacagctgatttc	163883	581198	—	—	—
9792	MUC15	NM_145650.2	1158	aaccaattctctgctgagacaat	414618	782012	—	—	—
9793	MUC15	NM_145650.2	1159	acctgattctgctgtagacactg	414619	782013	see also 9792 line	—	—
9794	MAP4K4	NM_145686.1	1937	ctgtctctctccagacaaatgt	414682	507498	kinase related	—	—
9795	ACB05	NM_145689.1	371	ttggtgtctcttggagagatata	172449	569759	—	—	—
9796	ACB05	NM_145698.1	372	ttggtgtctcttggagagatata	172450	569760	see also 9795 line	—	—
9797	ODIPT	NM_145752.1	467	agagttatcccggtgattcttc	161802	608496	—	phosphatidylinositol transporter	—
9798	ODIPT	NM_145752.1	468	agagttatcccggtgattcttgg	161803	608497	see also 9797 line	—	—
9799	LLbeta	NM_145753.1	273	gaagactatgctgctctattta	414776	769312	—	—	—
9800	LLbeta	NM_145753.1	2471	gaagactatgctgctctattga	414821	769355	see also 9799 line	—	—
9801	ISL2	NM_145905.1	1112	tccggagacaccccaacgtagt	5597	445132	transcription_regulat or	transcription factor	—
9802	ISL2	NM_145905.1	1113	ccggagacaccccaacgtagtg	5598	445133	see also 9801 line	—	—
9803	ABP1	NM_145931.1	1198	cgctctggtatgctatgacagc	49538	473002	—	—	—
9804	SLG5A8	NM_145913.2	870	tttgggtgctgctccacttctct	274444	657065	—	—	—
9805	SLG5A8	NM_145913.2	872	tttgggtgctgctccacttctctc	274445	657066	see also 9804 line	—	—
9806	LOC22308	NM_147128.3	1720	agctctctgtagtgattgttg	415017	816042	—	—	—
9807	MOB	NM_147156.2	1584	ctgacctctctgctgttttc	415045	753837	kinase related	—	—
9808	MOB	NM_147156.2	2035	agctctctctgctgttttttc	415059	753854	see also 9807 line	—	—
9809	MOB	NM_147156.2	2066	aggaattctactctgcttgaag	415060	753855	see also 9807 line	—	—
9810	MOB	NM_147156.2	2071	ttgctactgctcttaccattg	415061	753856	see also 9807 line	—	—
9811	HSB372	NM_147174.2	909	ctgctctctgctgaagacaaaga	218807	606548	—	—	—
9812	FOXO22	NM_147188.1	928	gtttgtgctctcttgaagttt	415072	732203	—	—	—
9813	FOXO22	NM_147188.1	1127	gtttgtgctctcttgaagttt	415078	732208	see also 9812 line	—	—
9814	MMP21	NM_147191.1	891	aggaatcattatgcaaccaatt	158294	558855	—	—	—
9815	OTX3	NM_147192.2	80	ctctccatgctccctatcacac	8801	443010	transcription_regulat or	—	—
9816	G8orf4	NM_147200.1	1495	ttgctctcttggagagatttc	277970	749737	kinase related	—	—

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9817	O6o-r4	NM.147200.1	1582	tggcaatcagcccaatacaaaa	271979	749746	see also 9816 line
9818	O6o-r4	NM.147200.1	1648	atgacttacctcaattgattcaatt	271982	749750	see also 9816 line
9819	O6o-r4	NM.147200.1	1650	agctcattctcaatgaagcttctca	271983	749750	see also 9816 line
9820	SMG12	NM.14867.1	1712	agctctctatgattctctgctcaatc	100549	487500	-
9821	SMG12	NM.14867.1	2129	cgagctctatgattctctgctcaatc	100556	487515	cell cycle
9822	SMG12	NM.14867.1	3228	ctcaatgactcaatctatcaaaaga	100558	487553	see also 9820 line
9823	FLJ38928	NM.152267.2	331	ctctgtgtgctgctgcttctcaata	415225	755725	see also 9820 line
9824	FLJ38928	NM.152267.2	520	ggagatgattcagaagctgttgattt	415230	755727	see also 9823 line
9825	MGC25916	NM.152272.1	583	ggagatgattcagaagctgttgattt	282114	667015	-
9826	DC-98P	NM.152272.1	123	tactcagcaatgaagctgttgattt	415294	784580	-
9827	SYT11	NM.152280.2	120	atcacgctctctcagctgttgattt	274993	707453	-
9828	SYT11	NM.152280.2	123	atcacgctctctcagctgttgattt	274994	707454	transporter
9829	FLJ11752	NM.152281.1	470	ectctcaagctcagctgttgattt	415313	807464	-
9830	ZFP276	NM.152287.2	1086	acctgagctgctgctgttaaaaga	415366	649974	transcription_regulat
9831	ZFP276	NM.152287.2	1088	ctcgtgctgctgctgttaaaaga	415367	649975	or
9832	TAFS	NM.152295.3	1276	cagggacaaagactatattctt	102101	515917	threonine-lyase
9833	TAFS	NM.152295.3	2287	tccacacttatacactatattct	102123	515946	see also 9832 line
9834	ATP1A3	NM.152296.2	232	aaagagctctccagaataaccac	72645	494407	sodium/potassium-exchanging
9835	NIRF	NM.152306.2	488	aaacacttggaaatgagatcac	33800	453151	transcription_regulat
9836	NIRF	NM.152306.2	883	atccaaagagcaacacacatatt	33817	453171	or
9837	NIRF	NM.152306.2	1072	tggatgtggtgagtgattcaatt	33829	453181	see also 9835 line
9838	NIRF	NM.152306.2	2064	agctctcattgagatgaataatt	33861	453211	see also 9835 line
9839	GYLTLB	NM.152312.2	639	cagctctcagctgctgctgctgct	212105	600680	-
9840	SLC36A4	NM.152312.2	425	tgtgtacgttgcctgctgctgctt	259653	641874	-
9841	FLJ30002	NM.152341.2	136	ggctgacactcagctgctgctgct	326532	691363	-
9842	MGC42174	NM.152383.2	281	gtgtgtgcagctgctgctgctgct	52536	472820	receptor activity
9843	DKFZp762i	NM.152384.1	145	tgtgtgtgatttcagctgctgctgct	416028	733677	-
9844	DKFZp762i	NM.152384.1	651	taccatattcgaactcgttctca	416051	733702	see also 9843 line
9845	DKFZp762i	NM.152384.1	682	tagagattcgaactcgttctgctgct	416054	733705	see also 9843 line
9846	DKFZp762i	NM.152384.1	978	aagactcgttgaactcgttctgctgct	416060	733710	see also 9843 line
9847	FLJ31322	NM.152387.1	493	tgaactcgaactcgttctgctgct	131348	534116	-
9848	FLJ31322	NM.152387.1	562	aggttctcgaactcgttctgctgct	131351	534123	-
9849	FLJ31322	NM.152387.1	565	tctcgaactcgttctgctgctgct	131352	534124	see also 9847 line
9850	FLJ31322	NM.152387.1	593	aagctcgaactcgttctgctgctgct	131354	534125	see also 9847 line
9851	FLJ39370	NM.152400.1	312	atgagctcgaactcgttctgctgct	416278	729614	-
9852	FLJ39370	NM.152400.1	313	tgtgtgtcgaactcgttctgctgct	416279	729615	see also 9851 line

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9853	FLJ383370	NM_152400.1	314	ggcttcacaaagtgatgtttg	418280	729616	see also 9851 line
9854	FLJ383155	NM_152403.2	1707	aaatgagcaaaatcasaaatg	146084	544333	-
9855	JMY	NM_152405.1	154	agatttcctcgaagatgatta	418318	525524	-
9856	JMY	NM_152405.1	989	tgaatgagctcgaagatgatta	418343	525548	see also 9855 line
9857	GRPEL2	NM_152407.2	585	gcctgcacacggcgaattgata	418372	688160	-
9858	GRPEL2	NM_152407.2	823	aaactatggccacacaaagatg	418378	688160	-
9859	FLJ35779	NM_152408.1	939	attttatctcagctttgataaag	418402	722117	see also 9857 line
9860	FLJ32370	NM_152411.1	617	ggcaaaacttcagctttgataaag	218292	603285	-
9861	FLJ32370	NM_152411.1	827	ggctttctcagctttgataaag	218289	603293	see also 9860 line
9862	MGC21437	NM_152430.1	263	ttgcttctcagctttgataaag	240800	628610	receptor activity, signal transduction
9863	KB1B03	NM_152433.2	883	gaattatctcagctttgataaag	132089	536120	-
9864	KB1B03	NM_152433.2	1408	ggagatcatatataaagctctcaga	132105	536148	see also 9863 line
9865	KB1B03	NM_152433.2	1419	gtctctcagctttgataaagctc	132108	536149	see also 9863 line
9866	FLJ32549	NM_152440.1	142	agaaacagcgggagcaaaagatg	418811	782335	-
9867	FLJ32549	NM_152440.1	240	acttactcgggagcaaaagatg	418813	782338	see also 9866 line
9868	CL1orf44	NM_152445.1	1741	aaagccctctctcttgacacag	321340	685787	-
9869	CL1orf44	NM_152445.1	881	ctgactctctcagctttgataaag	23248	454880	-
9870	CL1orf44	NM_152447.2	889	atccaggaatcctaagtttta	23249	454881	see also 9869 line
9871	CL1orf44	NM_152447.2	939	ttgaatggacacagcttgaactaa	23253	454888	see also 9869 line
9872	CL1orf44	NM_152447.2	1083	ctgtctctataactatgataaag	23260	454895	see also 9869 line
9873	CL1orf44	NM_152447.2	1971	ctgttcaactgtactatgataaag	23288	454738	see also 9869 line
9874	CL1orf44	NM_152447.2	2130	gttgtttgctcagctttgataaag	23297	454744	see also 9869 line
9875	CL1orf44	NM_152447.2	2147	tactacggagcaagctttgataaag	23298	454748	see also 9869 line
9876	KLHL10	NM_152467.1	835	aaagatgaatgaactatgataaag	29875	461100	-
9877	KLHL10	NM_152467.1	1848	ttgagctatgaggaagcaacttcc	30007	461128	-
9878	FLJ31842	NM_152487.1	87	aaagctctctctctcttcttct	417088	805132	see also 9876 line
9879	FLJ25288	NM_152548.1	87	aaactcagctctctctctctct	417878	723988	-
9880	FLJ23654	NM_152550.1	223	atggaatttttaagctttgataaag	417976	781816	-
9881	FLJ31818	NM_152558.1	682	aaagcggcctcagctttgataaag	418084	787901	-
9882	ATP6V002	NM_152565.1	1074	ttctatgaagcctcagctttgataaag	304858	672844	-
9883	ATP6V002	NM_152565.1	1076	caagagagcctcagctttgataaag	304857	672845	see also 9882 line
9884	FLJ31810	NM_152570.1	989	cgagcttcctcagctttgataaag	418126	789576	-
9885	FLJ31810	NM_152570.1	1296	agctctctctctctctctctctct	418134	789582	see also 9884 line
9886	FLJ31810	NM_152570.1	2375	cagagcttcagctttgataaag	418158	789607	see also 9884 line
9887	DKF2p762	NM_152988.1	461	ttgggtctcctctctctctctct	418345	795531	-
9888	DKF2p762	NM_152988.1	513	cagcctctctctctctctctctct	418346	795533	see also 9887 line
9889	DKF2p762	NM_152988.1	516	ccgtgctcctcagctttgataaag	418348	795534	see also 9887 line
9890	SPRED1	NM_152594.1	119	cgagcctctcagctttgataaag	418525	744174	signal transduction
9891	SPRED1	NM_152594.1	120	ggcgtcttcagctttgataaag	418526	744175	see also 9890 line

9892	SPRED1	NM_152594.1	121	gcacgtctctacaacgtaataag	418527	744176	see also 9890 line
9893	SPRED1	NM_152594.1	453	ccaaagacactctaaaggaatttt	418534	744180	see also 9890 line
9894	SPRED1	NM_152594.1	994	aaagatgagatcaatgctttagtto	418552	744204	see also 9890 line
9895	SPRED1	NM_152594.1	1097	aaagctctcgcgcgcgaatctgc	418556	744212	see also 9890 line
9896	SPRED1	NM_152594.1	1357	tcgcgcgcgcgcgcgcgcgcgcgc	418568	744221	see also 9890 line
9897	SPRED1	NM_152594.1	1359	gcgcgcgcgcgcgcgcgcgcgcgc	418568	744222	see also 9890 line
9898	FLJ35989	NM_152597.3	631	ccgcgcgcgcgcgcgcgcgcgcgc	418639	730608	-
9899	FLJ32001	NM_152609.1	972	agagatttaagtggaagattttt	418782	760750	-
9900	FLJ32001	NM_152609.1	973	agagatttaagtggaagattttt	418783	760751	see also 9899 line
9901	TRIM42	NM_152618.3	1226	ccagcgcgcgcgcgcgcgcgcgcgc	160582	555320	-
9902	TRIM42	NM_152618.3	1228	ccagcgcgcgcgcgcgcgcgcgcgc	160583	555321	see also 9901 line
9903	FLJ35794	NM_152617.2	724	tcgtgatacctccgcgaagaatt	418901	729089	-
9904	FLJ35794	NM_152617.2	725	cgtgatacctccgcgaagaatt	418902	729090	see also 9903 line
9905	MGC45428	NM_152619.1	677	agcgcgcgcgcgcgcgcgcgcgc	91328	489634	kinase, related
9906	MGC45428	NM_152619.1	678	agcgcgcgcgcgcgcgcgcgcgc	91329	489635	see also 9905 line
9907	MGC45428	NM_152619.1	681	atcaccgcgcgcgcgcgcgcgcgc	91330	489637	see also 9905 line
9908	MGC45428	NM_152619.1	738	atcaccgcgcgcgcgcgcgcgcgc	91333	489639	see also 9905 line
9909	MGC45428	NM_152619.1	740	caccgcgcgcgcgcgcgcgcgcgc	91334	489640	see also 9905 line
9910	MGC34648	NM_152660.1	729	accgcgcgcgcgcgcgcgcgcgc	91334	489640	see also 9905 line
9911	FLJ34969	NM_152678.1	576	tgatgtttgatacgaacttacc	265484	648293	-
9912	FLJ34969	NM_152678.1	1146	gcgcgcgcgcgcgcgcgcgcgcgc	419664	758900	-
9913	FLJ34969	NM_152678.1	1149	gcgcgcgcgcgcgcgcgcgcgcgc	419664	758905	see also 9911 line
9914	FLJ34969	NM_152678.1	1151	cgcgcgcgcgcgcgcgcgcgcgc	419665	758926	see also 9911 line
9915	FLJ34969	NM_152678.1	1152	tcgcgcgcgcgcgcgcgcgcgcgc	419667	758928	see also 9911 line
9916	FLJ34969	NM_152678.1	1394	aaagtttcatctctcattgataag	419673	758937	see also 9911 line
9917	MGC29493	NM_152686.1	767	tcgcccatatgctctcttata	32200	453488	-
9918	MGC29493	NM_152686.1	768	cgcgcgcgcgcgcgcgcgcgcgc	32201	453489	see also 9917 line
9919	HIPK1	NM_152696.3	335	ctctccacagatgacgaatttaca	28163	503439	kinase, related
9920	HIPK1	NM_152696.3	668	caagcgcgcgcgcgcgcgcgcgcgc	28174	503445	see also 9919 line
9921	HIPK1	NM_152696.3	875	ttccgccttaagcgcgcgcgcgcgc	28177	503446	see also 9919 line
9922	HIPK1	NM_152696.3	1788	aaagcgcgcgcgcgcgcgcgcgcgc	28196	503465	see also 9919 line
9923	HIPK1	NM_152696.3	1790	gcgcgcgcgcgcgcgcgcgcgcgc	28197	503466	see also 9919 line
9924	HIPK1	NM_152696.3	2084	tcgcgcgcgcgcgcgcgcgcgcgc	28204	503473	see also 9919 line
9925	HIPK1	NM_152696.3	2264	aggaagcgcgcgcgcgcgcgcgcgc	28209	503477	see also 9919 line
9926	HIPK1	NM_152696.3	2267	agagcgcgcgcgcgcgcgcgcgcgc	28210	503478	see also 9919 line
9927	MGC27076	NM_152699.2	446	gtgcgcgcgcgcgcgcgcgcgcgc	190800	584346	-
9928	MGC27076	NM_152699.2	2129	aaagcgcgcgcgcgcgcgcgcgcgc	190834	584387	see also 9927 line
9929	MGC27076	NM_152699.2	2131	atccacgcgcgcgcgcgcgcgcgcgc	190835	584388	see also 9927 line
9930	ITIM1	NM_152713.2	1292	agcgcgcgcgcgcgcgcgcgcgcgc	211437	600243	dligosaacharyl transferase
9931	FLJ35530	NM_152722.3	879	ctgcgcgcgcgcgcgcgcgcgcgc	420090	762284	-
9932	FLJ34586	NM_152726.1	620	ctgcgcgcgcgcgcgcgcgcgcgc	145980	542847	-
9933	CPNIE2	NM_152727.4	1146	ctgcgcgcgcgcgcgcgcgcgcgc	420115	769721	-
9934	CPNIE2	NM_152727.4	1757	gaagtcgcgcgcgcgcgcgcgcgcgc	420126	769728	see also 9933 line

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9935	BTED9	NM_152733.1	1453	tgcctatgagcacaataagat	120491	530823	-	-	-	-
9936	BTED9	NM_152733.1	1460	ttagagcacatagaattatgct	120492	530825	-	-	-	-
9937	MGC33993	NM_152737.1	551	agctctctctctctctctctct	420280	809137	-	-	-	-
9938	MGC33993	NM_152737.1	561	tggctctctctctctctctctct	420285	809138	-	-	-	-
9939	MGC33993	NM_152737.1	570	tagctctctctctctctctctct	420286	809139	-	-	-	-
9940	HOXA9	NM_152738.2	455	ccctctctctctctctctctct	5006	444739	-	-	-	-
9941	SDK1	NM_152744.2	1704	gtgctctctctctctctctctct	420346	800074	-	-	-	-
9942	FLJ31340	NM_152748.2	1397	gtgaattatctctctctctctct	420475	777699	-	-	-	-
9943	FLJ31340	NM_152748.2	1820	atgctctctctctctctctctct	420484	777711	-	-	-	-
9944	FLJ31340	NM_152748.2	1872	caggtctctctctctctctctct	420489	777716	-	-	-	-
9945	FLJ31340	NM_152748.2	1874	gttcctctctctctctctctct	420490	777718	-	-	-	-
9946	MGC33190	NM_152748.2	195	ctctctctctctctctctctct	420518	732724	-	-	-	-
9947	MGC33190	NM_152748.2	247	aggagctctctctctctctct	420520	732725	-	-	-	-
9948	SEMA3D	NM_152754.1	1250	gtcagctctctctctctctct	420644	685499	-	-	-	-
9949	SEMA3D	NM_152754.1	1252	cagctctctctctctctctct	420645	685500	-	-	-	-
9950	SEMA3D	NM_152754.1	1267	agacacacacacacacacac	420646	685502	-	-	-	-
9951	MGC33510	NM_152765.2	427	ctctctctctctctctctctct	420882	801489	-	-	-	-
9952	MGC33510	NM_152765.2	427	tggctctctctctctctctct	273839	655341	-	-	-	-
9953	MGC33502	NM_152778.1	1125	aaattctctctctctctctct	273863	655367	-	-	-	-
9954	LOC14942	NM_152935.1	300	gcacacacacacacacacac	88583	495919	-	-	-	-
9955	LOC14942	NM_152935.1	302	cagcacaagacacacacac	88586	495920	-	-	-	-
9956	LOC14942	NM_152935.1	340	tgctctctctctctctctctct	88588	495921	-	-	-	-
9957	LOC14942	NM_152935.1	451	ctgctctctctctctctctct	88591	495929	-	-	-	-
9958	LOC14942	NM_152935.1	536	aaattctctctctctctctct	88595	495933	-	-	-	-
9959	LOC14942	NM_152935.1	1192	tggctctctctctctctctct	88605	495950	-	-	-	-
9960	MGC3794	NM_152902.2	444	tggctctctctctctctctct	421545	756823	-	-	-	-
9961	MGC3794	NM_152902.2	498	aaattctctctctctctctct	421546	756826	-	-	-	-
9962	MGC3794	NM_152902.2	506	acctctctctctctctctct	421547	756828	-	-	-	-
9963	MGC3794	NM_152902.2	737	gaactctctctctctctctct	421555	756833	-	-	-	-
9964	MGC3794	NM_152902.2	738	acctctctctctctctctct	421556	756834	-	-	-	-
9965	MGC3794	NM_152902.2	804	tctctctctctctctctctct	421559	756839	-	-	-	-
9966	MGC3794	NM_152902.2	810	cttctctctctctctctctct	421560	756841	-	-	-	-
9967	DRB1	NM_152945.1	551	atggaacacacacacacac	60458	483927	-	-	-	-
9968	DRB1	NM_152945.1	559	atggaacacacacacacac	60459	483928	-	-	-	-
9969	DRB1	NM_152945.1	1004	tgatctctctctctctctct	60482	483963	-	-	-	-
9970	LOC12928	NM_152994.2	365	caattctctctctctctctct	421696	735260	-	-	-	-
9971	SIAT7C	NM_152996.1	318	acctctctctctctctctct	212806	601168	-	-	-	-
9972	SIAT7C	NM_152996.1	325	acctctctctctctctctct	212808	601197	-	-	-	-
9973	SIAT7C	NM_152996.1	843	tctctctctctctctctctct	212825	602170	-	-	-	-
9974	KOTD7	NM_153033.1	577	tggctctctctctctctctct	132806	538790	-	-	-	-
9975	ALBP2	NM_153027.2	905	aaaggaacacacacacacac	422139	414604	-	-	-	-
9976	FLJ33761	NM_153211.1	898	aaagccctctctctctctct	422161	734145	-	-	-	-
9977	FLJ33761	NM_153211.1	1770	ctctctctctctctctctct	422195	734168	-	-	-	-

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9978	FLJ133990	NM_153226.1	261	ctgacatgctcttttttaca	328903	694595	-	-
9979	FLJ36812	NM_153260.1	611	atgaatctgaagaacttgaag	422678	711700	-	-
9980	SVY14	NM_153262.1	43	tgctgtatgaatgaacttactgt	215020	606265	-	-
9981	SVY14	NM_153262.1	269	tgtctctctctgaagaatgaag	215027	806274	see also 9980 line	-
9982	SVY14	NM_153262.1	1358	cgagccaccacacatcatgtta	215055	806295	see also 9980 line	-
9983	FLJ35827	NM_153265.1	589	cttgatctctgagagtcattatc	422736	794573	-	-
9984	FLJ35827	NM_153265.1	589	tggctctctgagagtcattatc	422737	794573	see also 9983 line	-
9985	LMND2	NM_153281.3	1139	acactcttgatccaatctggaac	328913	693988	-	-
9986	KC1D6	NM_153311.2	402	ggactctggctatctgtaact	132773	536771	channel	-
9987	KC1D6	NM_153331.2	540	ggacactctgaagaacttactt	132778	536776	see also 9986 line	-
9988	LYK5	NM_153335.2	470	gaactgaagaactcttccaatga	88633	486635	kinase related	-
9989	MG046534	NM_153340.2	1280	gccaatgaagctctgtttttacc	422805	788187	-	-
9990	MG033214	NM_153345.2	136	tatgtatatacagctgtgtttacc	422973	786236	-	-
9991	MG033214	NM_153354.2	712	gacttgaacacaggtttaccaat	421991	786253	see also 9950 line	-
9992	Cborf158	NM_153362.1	428	gagaatggacacgaaccttaac	181698	574813	-	-
9993	FLJ90013	NM_153365.1	1258	gaattgaacacgctcaatataa	423096	784388	-	-
9994	PI16	NM_153370.1	547	gctctctctgagccacaacagg	223636	584545	-	-
9995	H565T3	NM_153456.1	26	tggctgaagaagttcaaacatagg	218818	606664	-	-
9996	MYGD	NM_153804.1	2105	ttctatccaccacactttttcaag	33091	468256	transcription regulator	-
9997	LOC15322	NM_153807.1	567	ggacacacttgatgaactactgt	30762	454388	or	-
9998	LOC15322	NM_153807.1	1933	agccacacttgatgaactactgaag	30798	454413	see also 9957 line	-
9999	LOC15322	NM_153807.1	2078	aactcttaactctcttttaaga	30802	454422	see also 9957 line	-
10000	LOC15322	NM_153807.1	2124	gcacacttaactctcttttaaga	30804	454434	see also 9957 line	-
10001	SEMARD	NM_153817.1	2161	ttccacactctgaagtttttgaac	320504	816402	receptor activity	-
10002	CPIER	NM_153834.2	351	aaagaggaactctgttttttgaac	423415	719103	-	-
10003	SLC24A4	NM_153846.1	1774	ttctctctatgaagagtttaa	327419	691231	-	-
10004	MLR1	NM_153864.1	154	ctgtctgagttttgagagtttt	423478	698021	-	-
10005	MLR1	NM_153864.1	154	cgacgaagagagagagttttga	423493	697984	see also 10004 line	-
10006	MLR1	NM_153868.4	683	ggccttgcacagtttcaaccacaa	423501	658029	see also 10004 line	-
10007	LOC91526	NM_153897.1	186	ttttcgaactgaactgaactgaac	423562	799591	-	-
10008	STRC	NM_153700.2	2988	ttttcgaactgaactgaactgaac	423667	746549	-	-
10009	STRC	NM_153700.2	2991	agagcagagtgacatgaactctc	423668	746550	see also 10008 line	-
10010	MG010084	NM_153702.1	692	aggttatcttctgaactgaacttg	423701	803732	apoptosis	-
10011	MG010084	NM_153702.1	693	aggttatcttctgaactgaacttg	423701	803733	see also 10010 line	-
10012	MG010084	NM_153702.1	725	tcaagagagctgactgaacttc	423703	803735	see also 10010 line	-
10013	MG026979	NM_153704.2	1303	sacgcgcgcactttcttagtg	282059	799663	-	-
10014	MG026979	NM_153704.2	1316	ttcttagtgagctgaactgaact	282060	799664	see also 10013 line	-
10015	MG026979	NM_153704.2	1644	ttcccatgtctcttgaacacaa	282063	799680	see also 10013 line	-
10016	Cborf188	NM_153711.1	620	tatgaatctgaactgaactga	423633	804810	-	-
10017	ITL	NM_153712.2	619	argacacactttgctgcaag	231871	616760	-	-
10018	ITL	NM_153712.2	620	ggacacactttgctgcaag	231871	616761	see also 10017 line	-
10019	ITL	NM_153712.2	863	tccagacactttgctgcaag	231880	818788	see also 10017 line	-
10020	RTN4	NM_153828.1	722	ctggctctgaactgtgtttacc	135481	940177	apoptosis	protein binding

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10021	QPR110	NM.153940.1	1598	aaagatcgtgtgtgttaacatgag	242741	630241	receptor activity, gp., signal transduction
10022	GSE-C	NM.170801.1	37	gacagagatgcagatgtgttt	423958	591741	transcription, regulat or
10023	TCFL4	NM.170807.2	817	tgtatgtatccagactcactagc	13041	468964	or
10024	WDRI7	NM.170710.2	352	tgtgatccacttttaattgaatt	425971	571957	or
10025	WDRI7	NM.170710.2	1056	aagacacacacacttgtaatac	423991	571989	see also 10024 line
10026	WDRI7	NM.170710.2	1613	tgtctgtatccatgaagattct	424011	578011	see also 10024 line
10027	WDRI7	NM.170710.2	1925	ccgttgatctgtgttttaact	424025	578030	see also 10024 line
10028	WDRI7	NM.170710.2	4100	cttgatcaagctcaactcaatc	424112	578134	see also 10024 line
10029	RAB39B	NM.171998.1	490	tacacttttaacttccacaact	110266	518362	signal transduction
10030	RAB39B	NM.171998.1	566	tccatcagcagccggaactgtg	110268	518365	see also 10029 line
10031	RAB39B	NM.171998.1	590	tctgtatcacagctgaagtata	110269	518368	see also 10029 line
10032	RAB39B	NM.171998.1	672	gacatataagctgttttaaaag	110274	518367	see also 10029 line
10033	RDH10	NM.172037.1	1201	tccatgaagacgaactgtatg	227316	614614	phosphatase, transcription, regulat or
10034	EY44	NM.172105.1	2186	aaacttttttcagctataatgt	205107	595862	or
10035	EY44	NM.172105.1	2196	aagctatattctcagattttg	205108	595863	see also 10034 line
10036	EY44	NM.172105.1	2207	ctccatgtttgtctcaactatca	205109	595864	see also 10034 line
10037	EY44	NM.172105.1	2208	tccatgtttgtctcaactatca	205110	595865	see also 10034 line
10038	KCNAB1	NM.172159.1	521	baacttcacagacgaactttg	280932	644278	channel
10039	KLHDC1	NM.172193.1	113	aaagctacagctctgtttgaaga	424273	801029	or
10040	KLHDC1	NM.172193.1	115	aaagctacagctctgtttgaaga	424274	801028	see also 10039 line
10041	KLHDC1	NM.172193.1	119	taactgtctatgaagcacaaga	424275	801027	see also 10039 line
10042	TFAP2B1	NM.172238.1	566	atcaaacagctaccgtttgtgc	13119	449425	transcription, regulat or
10043	TFAP2B1	NM.172238.1	839	gcccaacagctatttaactctg	13120	449431	see also 10042 line
10044	KCNH1	NM.172362.1	1134	atgtgtgtatccagagaagattg	121480	526655	channel, signal transduction
10045	KCNH1	NM.172362.1	1138	gtgtatccaggaagattgttttt	121481	526656	see also 10044 line
10046	ELF1	NM.172373.2	344	tctctgtctctatcttcact	3007	443212	hematopoietic-associated factor
10047	SCUBE1	NM.173050.1	494	ccctctcaatgaagctataaact	152885	553763	receptor activity
10048	SCUBE1	NM.173050.1	613	accagaagacagctacacatacc	152886	553764	see also 10047 line
10049	ABCA12	NM.173076.2	388	tactctgcactcgaanaacttcc	66528	786461	or
10050	SHPRH	NM.173082.1	1432	aactctctataaactatataca	39251	468905	transcription, regulat or
10051	SHPRH	NM.173082.1	1434	ctctataataatccatacagg	39252	468906	see also 10050 line
10052	SHPRH	NM.173082.1	2783	accgaagacagctcactatgag	39284	468939	see also 10050 line
10053	SHPRH	NM.173082.1	2837	ttgagagatctctctgtatgag	39285	468940	see also 10050 line
10054	SHPRH	NM.173082.1	2838	ttagagatctctctgtatgagc	39286	468941	see also 10050 line

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10055	SHPRH	NM_173082.1	3978	cgatttttcttctacacacaat	39322	486990	see also 10050 line
10056	SHPRH	NM_173082.1	4162	cgagcttgatcctaaagctattt	39328	486994	see also 10050 line
10057	SHPRH	NM_173082.1	4300	cgagcttgatcctaaagctattt	39332	487002	see also 10050 line
10058	SHPRH	NM_173082.1	4953	gfgctcgaagctcgttgaaat	39351	487027	see also 10050 line
10059	SHPRH	NM_173082.1	5015	aacgtcgaagctcgttgaaat	39355	487034	see also 10050 line
10060	SHPRH	NM_173082.1	5016	acgtcgaagctcgttgaaat	39356	487035	see also 10050 line
10061	TGS	NM_173083.2	665	cgaaagctgtttctgattacg	424721	786208	-
10062	TPH2	NM_173553.2	1435	atgaggctgttcgaagctcaat	164568	562360	-
10063	TPH2	NM_173553.2	1437	atgaggctgttcgaagctcaat	164569	562361	see also 10062 line
10064	SNF1LK	NM_173934.1	242	accacaaacgcaggtgtcacaataa	100934	515081	protein tyrosine kinase
10065	UPP2	NM_173955.2	339	cacacactccacgaactctttgac	234711	740332	-
10066	LOC933480	NM_173470.1	369	ccctcgcgcagctcgtctcttata	424887	761440	-
10067	LOC933480	NM_173470.1	371	ctccgcacacatcctctctatgc	424888	761441	see also 10066 line
10068	LOC933480	NM_173470.1	372	ctccgcacacatcctctctatgc	424889	761442	see also 10066 line
10069	MGC48972	NM_173475.1	733	cgattctctcaactctctctacaga	424932	783433	-
10070	MGC48972	NM_173475.1	779	agactctctcaactctctctacatt	424935	783433	see also 10069 line
10071	LSM11	NM_173491.1	664	ctactctctactaagctctttttaa	46321	471148	-
10072	LSM11	NM_173491.1	666	gactctctactaagctctttttaa	46322	471149	see also 10071 line
10073	ITBK2	NM_173500.2	834	ttgctctctctctctctctctctct	103671	517145	kinase related
10074	ITBK2	NM_173500.2	849	ttgctctctctctctctctctctct	103671	517145	see also 10073 line
10075	SLC35F3	NM_173509.1	1424	tcgctctctctctctctctctctct	423222	662943	-
10076	MGC18664	NM_173509.1	415	tcgctctctctctctctctctctct	423227	789416	-
10077	FLJ33814	NM_173510.1	382	tgacttatctctctctctctctct	423238	750268	-
10078	FLJ39709	NM_173514.1	1318	tgacttatctctctctctctctct	259561	641031	-
10079	FLJ39709	NM_173514.1	1536	tgacttatctctctctctctctct	259565	641031	-
10080	FLJ38964	NM_173527.1	758	ccgtctctctctctctctctctct	27399	465840	signal transduction
10081	MGC47799	NM_173545.1	239	cgagaagctcgaactctctctgag	425780	715098	-
10082	LOC20129	NM_173547.2	1016	ggcagaattatcgaactctctgacc	425835	555130	-
10083	RF-XDC1	NM_173560.1	1120	tggaacacatctgtgtgttctatc	36588	466298	transcription_regulat
10084	RF-XDC1	NM_173560.1	1708	cagaatttttttgcgaagctctat	36607	466322	see also 10083 line
10085	C10orf48	NM_173576.1	528	acpcttctctctctctctctctct	1852	796993	transcription_regulat
10086	C10orf48	NM_173576.1	529	ccgtctctctctctctctctctct	1853	796994	see also 10085 line
10087	C10orf48	NM_173576.1	621	aaattatcaacacagctctctttaa	1861	797003	see also 10085 line
10088	C10orf48	NM_173576.1	852	acgtcttctctctctctctctct	1867	797010	see also 10085 line
10089	FLJ35994	NM_173615.1	428	gggaatttttttctctctctctct	426532	459708	-
10090	FLJ35994	NM_173615.1	819	cgctctctctctctctctctctct	426546	453728	see also 10089 line
10091	FLJ30652	NM_173615.1	343	cgagaagctcgaactctctctct	426583	770695	-
10092	RTTN	NM_173630.2	1797	acacagctctctctctctctct	426747	685199	-
10093	RTTN	NM_173630.2	1800	acagctctctctctctctctct	426748	685200	see also 10092 line
10094	RTTN	NM_173630.2	2163	ttcaggagctctctctctctct	426758	685213	see also 10092 line
10095	RTTN	NM_173630.2	2276	tgactctctctctctctctctct	426759	685218	see also 10092 line

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10096	RTTN	NA.173630.2	3154	atctatctatcgagatgaatc	426789	685256	see also 10092 line
10097	RTTN	NA.173630.2	3155	tgtatcatatgaatgaatcatc	426790	685257	see also 10092 line
10098	RTTN	NA.173630.2	4388	cagaatctctctgaattccaat	426831	685282	see also 10092 line
10099	RTTN	NA.173630.2	5115	tgtatctctctctctctttccc	426832	685289	see also 10092 line
10100	RTTN	NA.173630.2	5845	tgcacatgcctctctctgaacct	426870	685317	see also 10092 line
10101	FLJ09005	NA.173633.1	1222	atcctctctctctctctctgacc	426914	809624	-
10102	MGC47816	NA.173642.1	982	gtccatcagctatgcactatgagt	302193	670729	-
10103	SLC9A9	NA.173653.1	1318	tgtatgcctctctctctctctttt	258449	642580	-
10104	MGC34132	NA.173654.1	1272	cacagatcctctctctctctctta	427111	787937	-
10105	MGC34132	NA.173654.1	1400	cacacacacacgacacattattt	427121	787966	see also 10104 line
DKF2p434							
10106	C14I18	NA.173655.1	592	tgcgctctcccgaggaataaac	78264	501848	-
DKF2p434							
10107	C14I18	NA.173655.1	593	tgcctctcccgaggaataaac	78265	501849	see also 10106 line
10108	DBDL1	NA.173674.1	276	gtccacatgcactctagaatta	318788	717960	-
10109	LOC28604	NA.173683.2	595	tggagatctgtacattctctgc	427363	783253	-
10110	FLJ32440	NA.173685.1	803	cgccattgtctgcattgttaatt	427413	727061	-
10111	FLJ36664	NA.173690.1	958	acgcactcatatgttgatttgt	427477	804186	-
10112	FLJ36664	NA.173690.1	1571	tctctatgcctctctctctttg	427499	804207	see also 10111 line
10113	FLJ36664	NA.173690.1	1831	cacacactgcacaggaataaac	427506	804216	see also 10111 line
10114	MGC51029	NA.173794.2	155	ccctctccacagcatgaataac	427973	732223	-
10115	MGC51029	NA.173794.2	260	cgagcactctctctctgaataac	428179	764574	see also 10114 line
10116	NEGR1	NA.173808.1	532	ctctccctctctctctctctttg	428374	774971	-
10117	MGC39518	NA.173822.1	364	agcgtttgctctctctctctgag	428374	775003	see also 10117 line
10118	MGC39518	NA.173822.1	1377	ttggagctctctctctctctctg	428388	775018	see also 10117 line
10119	MGC39518	NA.173822.1	1736	ctctctctctctctctctctctct	428390	775019	see also 10117 line
10120	MGC39518	NA.173822.1	1738	ctctctctctctctctctctctct	428390	775021	see also 10117 line
10121	MGC39518	NA.173822.1	1742	atctcccaagttctctctctctg	428501	775865	-
10122	KCP2	NA.173832.2	396	tgtgtgtctctctctctctctac	428501	775865	transcription regulat
10123	HPC2	NA.173860.1	395	cgctctgcctctctctctctgac	5173	447844	or
10124	BPL13	NA.174897.1	1306	ctgtctgtatctctctctctctaga	173355	816555	transcription factor -
10125	UBR1	NA.174916.1	84	tgttgtatgcacattgtttttt	231473	541972	-
10126	UBR1	NA.174916.1	1095	tgtccctgaagctctctctctaat	231501	542009	see also 10125 line
10127	UBR1	NA.174916.1	1847	ctgtgtctctctctctctctctg	231522	542032	see also 10125 line
10128	UBR1	NA.174916.1	2524	cagcatagacagcatgaacatat	231537	542054	see also 10125 line
10129	UBR1	NA.174916.1	2947	gtccactgaagcatgaagcaga	231613	542065	see also 10125 line
10130	UBR1	NA.174916.1	4813	gtccactgaagcatgaagcaga	231613	542106	see also 10125 line
10131	UBR1	NA.174916.1	4750	gtgtgtgtctctctctctctctg	231620	542112	see also 10125 line
10132	UBR1	NA.174916.1	4751	tgtgtgtgtctctctctctctctg	231621	542113	see also 10125 line
10133	PCS9	NA.174938.2	1084	ctctatgtctctctctctctctctg	183153	576881	-
10134	MGC20553	NA.174938.3	531	gggaattctctctctctctctctg	192136	687129	-
10135	MGC20553	NA.174938.3	1905	gggaattctctctctctctctctg	192160	687162	see also 10134 line
10136	C14orf39	NA.174978.1	330	tgtgaagccacatctctctctt	429538	739069	-

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10137	O14or39	NM.174978.1	333	aggccaacattgacattgtttttg	428839	739070	see also 10136 line
10138	O14or39	NM.174978.1	349	gtttgtgtctatcttgacaatt	428850	739075	see also 10136 line
10139	O14or39	NM.174978.1	1237	catatagaacaataaagaatca	428871	739100	see also 10136 line
10140	O14or39	NM.174978.1	1591	caatcaatttaaatgaacttat	428883	739115	see also 10136 line
10141	LOC13136	NM.175056.1	345	caatgaactgtctatgaagag	428917	803417	-
10142	LOC13136	NM.175056.1	585	taactgtgtctctatgaagag	428925	803420	see also 10141 line
10143	LOC13136	NM.175056.1	590	taactgtgtctctatgaagag	428926	803423	see also 10141 line
10144	LOC13136	NM.175056.1	717	aggctcttcaaatattgtttg	428934	803433	see also 10141 line
10145	CNTN4	NM.175067.1	1314	gtgtcttttaaatgcttaaacac	429101	498547	-
10146	CNTN4	NM.175067.1	1482	gtgtgtgtgtgtgtgtgtgtgtgt	429108	498558	see also 10145 line
10147	CNTN4	NM.175067.1	1885	aggatcagcagggtgtgtgtgtg	429118	498570	see also 10145 line
10148	CNTN4	NM.175067.1	1944	gtgtgtgtgtgtgtgtgtgtgtgt	429119	498572	see also 10145 line
10149	LOC13283	NM.175737.2	126	caaggaaatgaatgttttttc	202946	593517	-
10150	LOC13283	NM.175737.2	786	aggacagctgtcaaatattgtatt	202972	593536	see also 10149 line
10151	LOC13283	NM.175737.2	788	ggcagctgtcaaatattgtatt	202973	593537	see also 10149 line
10152	LOC13283	NM.175737.2	789	accgtgtcaaatattgtattgata	202974	593538	see also 10149 line
10153	LOC13283	NM.175737.2	792	gtgtcaaatattgtattgata	202975	593539	see also 10149 line
10154	PAN3	NM.175854.4	1751	tagcaaatattgtttgaacact	429353	733821	kinase, related
10155	KIS	NM.175866.1	902	aacagcttgcctattgtttgaca	52358	473963	kinase, related
10156	KIS	NM.175866.1	904	caagttgcctattgtttgaca	52359	473964	see also 10155 line
10157	MGC45594	NM.175907.2	399	aacgcatctgacatacaacttcc	157844	557137	-
10158	MGC45594	NM.175907.2	400	aacgcatctgacatacaacttcc	157845	557138	see also 10157 line
10159	MGC50831	NM.175924.2	276	tggtgtgcattgacgtctcaagttcc	148404	750792	-
10160	KENAE	NM.176816.2	830	ccctgcgcacgtctgtatttacc	429780	808429	-
10161	KENAE	NM.176816.2	833	ccctgcgcacgtctgtatttacc	429781	808431	-
10162	STX12	NM.177424.1	770	aggctgttctactcaagaat	278933	652729	-
10163	PAOR3	NM.177453.2	641	ctctctgtctcaagaattttt	327123	813301	receptor activity
10164	KIAA1946	NM.177454.2	2179	ctctctgtctcaagaattttt	29891	634739	-
10165	KIAA1946	NM.177454.2	2536	aggatgaatgaacgttactactt	29897	634745	-
10166	PKHD11	NM.177531.2	377	tgctgaatctcaactcaactt	428985	628965	-
10167	PKHD11	NM.177531.2	3225	caagttgaagctgtgtctgaagg	430000	628973	see also 10166 line
10168	PKHD11	NM.177531.2	10323	tggtcagcagcagctgtgtgtgt	430192	628986	see also 10166 line
10169	PKHD11	NM.177531.2	1242	tggtcagcagcagctgtgtgtgt	430215	628988	see also 10166 line
10170	PKHD11	NM.177531.2	12511	atgactgtgtgtgtgtgtgtgtgt	430284	628998	see also 10166 line
10171	PKHD11	NM.177531.2	12513	ggcctgtgtgtgtgtgtgtgtgt	430285	628997	see also 10166 line
10172	ALEX2	NM.177945.1	2016	accagcaactgtctgtcaacttc	430283	721725	-
10173	SYT12	NM.177963.2	87	accactgtgtgtgtgtcaacttc	274999	657548	-
10174	DSG4	NM.177966.2	277	sagcggaggttggtcaactgttc	142532	806385	-
10175	DSG4	NM.177966.2	813	catgagagcaacacgtgtgtgtca	142552	806378	see also 10174 line
10176	OTOP1	NM.177998.1	1764	tgctgtgtgtgtgtgtgtgtgtgt	430367	777766	-
10177	OTOP1	NM.177998.1	1765	ggcttgaacctgtgtgtgtgtgt	430368	777767	see also 10176 line
10178	OTOP1	NM.177998.1	1841	gcctttgtgtgtgtgtgtgtgtgt	430370	777771	see also 10176 line
10179	LOC16242	NM.178126.2	746	gtgtgtgtgtgtgtgtgtgtgtgt	430483	725582	-
10180	FUT8	NM.178154.1	737	ctgtgtgtgtgtgtgtgtgtgtgt	210774	596811	-

10181	FUT8	NM.178154.1	728	tggtctgcgttgattatgac	210775	598612	see also 10180 line
10182	FUT8	NM.178154.1	741	tccgtgcttgattatgctta	210776	598613	see also 10180 line
10183	UR6	NM.178274.2	628	tggtctgcgttgattatgac	430647	725081	-
10184	UR6	NM.178274.2	2301	tggtctgcgttgattatgac	430669	725081	see also 10183 line
10185	UR6	NM.178274.2	2377	tggtctgcgttgattatgac	430675	725087	see also 10183 line
10186	UR6	NM.178274.2	2873	tggtctgcgttgattatgac	430681	725101	see also 10183 line
10187	SPTB1	NM.178313.1	438	cggttgagctgcttccaaactac	119355	524150	structural constituent of cytoskeleton
10188	SPTB1	NM.178313.1	6754	gggtctgcgttgattatgac	119357	524256	-
10189	MGC48332	NM.178450.2	445	caccgagcccttgattatgac	265489	646571	see also 10187 line
10190	MGC54289	NM.178454.1	201	tggttgattatgattatgac	430771	720832	-
10191	MGC54289	NM.178454.1	418	aggcaattatgattatgac	430783	720838	see also 10190 line
10192	MGC54289	NM.178454.1	428	atgttgattatgattatgac	430784	720839	see also 10190 line
10193	LOC15196	NM.178498.2	779	tggttgagctgcttccaaactac	430865	798399	-
10194	LOC15196	NM.178498.2	1360	tacttgcttgagaaactatgc	430885	798412	see also 10193 line
10195	PIGW	NM.178517.2	1275	taccattcttgaaactatgc	431042	729250	-
10196	FL12570	NM.178555.2	805	tggttgcttgattatgaaact	431235	794249	-
10197	FL12570	NM.178555.2	807	tggttgcttgattatgaaact	431236	794251	see also 10196 line
10198	MGC50844	NM.178562.2	279	tggttgcttgattatgaaact	431295	691344	-
10199	MGC50844	NM.178562.2	283	cagctgcgttgattatgaaact	431296	691345	-
10200	ZDHHC21	NM.178566.2	907	tacttgcttgattatgaaact	431320	726525	-
10201	LYRC	NM.178812.2	899	tggttgcttgattatgaaact	431342	720728	-
10202	LYRC	NM.178812.2	970	tggttgcttgattatgaaact	431344	720729	see also 10201 line
10203	LYRC	NM.178812.2	985	tacttgcttgattatgaaact	431345	720730	see also 10201 line
10204	LYRC	NM.178812.2	1089	tggttgcttgattatgaaact	431347	720734	see also 10201 line
10205	LYRC	NM.178812.2	1400	cagtcttgcttgattatgaaact	431354	720741	see also 10201 line
10206	LYRC	NM.178812.2	1402	tggttgcttgattatgaaact	431355	720742	see also 10201 line
10207	LYRC	NM.178812.2	1423	tggttgcttgattatgaaact	431356	720743	see also 10201 line
10208	LYRC	NM.178812.2	2001	cagctgcgttgattatgaaact	431372	720762	see also 10201 line
10209	CKLF5F4	NM.178818.2	628	cagaattctgcgttgattatg	328584	694512	-
10210	MI1819	NM.178819.2	1149	ggcttgcttgattatgaaact	216248	603458	-
10211	MI1819	NM.178819.2	1155	caccacgcgttgattatgaaact	216250	603459	see also 10210 line
10212	MI1819	NM.178819.2	1211	tcttgcttgattatgaaact	216252	603461	see also 10210 line
10213	MI1819	NM.178819.2	1212	tcttgcttgattatgaaact	216253	603462	see also 10210 line
10214	MI1819	NM.178819.2	418	tggttgcttgattatgaaact	431783	804105	-
10215	MI1819	NM.178819.2	704	tggttgcttgattatgaaact	431787	804117	-
10216	MI1819	NM.178819.2	710	tggttgcttgattatgaaact	431788	804119	see also 10214 line
10217	MI1819	NM.178819.2	717	tggttgcttgattatgaaact	431790	804120	see also 10214 line
10218	MI1819	NM.178819.2	727	tggttgcttgattatgaaact	431791	804121	see also 10214 line

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10219	TMEM16D	NM_178826.2	848	ttctatcagcagctgcataaaca	431762	804123	see also 10214 line	
10220	TMEM16D	NM_178826.2	851	atcagcagctgcataaaca	431793	804124	see also 10214 line	
10221	TMEM16D	NM_178826.2	851	atcagcagctgcataaaca	431793	804124	see also 10214 line	
10222	LOC11681	NM_178832.2	1141	tccctcagctgcataaaca	431793	804135	see also 10214 line	
10223	SEZ6	NM_178860.2	382	ccctcagctgcataaaca	431984	811892	-	
10224	SEZ6	NM_178860.2	2282	ccctcagctgcataaaca	432039	710940	-	
10225	KGDI3	NM_178860.2	2615	agcagcagcgcgcctcctaccc	432041	710944	see also 10223 line	
10226	KGDI3	NM_178860.2	431	ccgagcagcgcgcctcctaccc	132667	536640	channel	
10227	NXF	NM_178862.2	718	acacagcagcgcgcctcctaccc	132670	536643	see also 10223 line	
10228	ARRGAP8	NM_181333.1	2504	tacgctgagctgcataaaca	254728	639291	signal, transduction	
10229	ARRGAP8	NM_181333.1	232	tccctcagctgcataaaca	297661	759769	-	
10230	OXRI	NM_181354.2	636	gccctcctcagcacaagcttg	297668	665127	-	
			1750	aagcagctgcataaaca	282287	671236	-	
10231	PAX3	NM_181457.1	1216	atgccttcacacacacacac	8880	447553	transcription, regulat	
10232	ZNF445	NM_181486.3	2745	cagatgcagcttcacacacac	432164	783023	transcription, regulat	
10233	OIP2	NM_181503.1	57	ctgagcttcacacacacac	53127	472641	-	
10234	OIP2	NM_181503.1	514	tcagcttcacacacacac	53138	472650	-	
10235	MRLP21	NM_181512.1	130	tccctcagcttcacacacac	432072	473194	see also 10233 line	
10236	MRLP21	NM_181512.1	429	tgcctgcagcagcagcagctgc	432378	473200	see also 10235 line	
10237	PKD1L3	NM_181536.1	2681	ggcctcctgcagcagcagctgc	432503	806191	channel,	
							signal, transduction	
10238	CUTL1	NM_181552.1	1402	agcagcagcagcagcagctgc	2644	442858	transcription, regulat	
10239	CUTL1	NM_181552.1	1403	gcagcagcagcagcagctgc	2645	442859	or	
10240	CUTL1	NM_181552.1	1404	gcagcagcagcagcagctgc	2646	442860	see also 10238 line	
10241	CUTL1	NM_181552.1	1405	gcagcagcagcagcagctgc	2647	442861	see also 10238 line	
10242	CUTL1	NM_181552.1	3605	tgcctgcagcagcagcagctgc	2664	442869	see also 10238 line	
10243	AUP1	NM_181575.2	461	ctgagcagcagcagcagctgc	216136	603484	-	
10244	AUP1	NM_181575.2	465	agcagcagcagcagcagctgc	216137	603485	see also 10243 line	
10245	PITPNC1	NM_181671.1	1048	tcgagcagcagcagcagctgc	271843	673432	signal, transduction	
10246	PITPNC1	NM_181671.1	1049	tcgagcagcagcagcagctgc	271844	673433	see also 10245 line	
10247	OGT	NM_181672.1	250	cacagcagcagcagcagctgc	134303	601967	signal, transduction	
10248	OGT	NM_181672.1	259	acacagcagcagcagcagctgc	134305	601968	see also 10247 line	
10249	LOC11423	NM_181708.1	214	agcagcagcagcagcagctgc	432857	738192	-	
10250	LOC25510	NM_181719.1	845	agcagcagcagcagcagctgc	433013	740863	-	
10251	TMEM13	NM_181744.1	108	tgcagcagcagcagcagctgc	433063	807015	-	
10252	GPR120	NM_181745.1	650	tgcagcagcagcagcagctgc	239414	809844	receptor, activity,	
10253	NOG37	NM_181782.1	2826	gcagcagcagcagcagctgc	303354	774639	gpr,	
							signal, transduction	

Rhabdomyosarcoma (胎生球細胞新肉腫)
alveolar rhabdomyosarcoma (胎生球細胞新肉腫)
facial, craniofacial-deafness-hand syndrome (顔面聾手症) Waardenburg syndrome (ワールデ
ンブルグ症候群)

図46 (続き)

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10254	NRP5998	NM_181806.1	2317	atgagctcttataagtgattg	433614	611792	-	-	-
10255	NRP5998	NM_181806.1	2319	ggctcttataagtgattg	433615	611793	transcription_regulat	see also 10254 line	-
10256	C6orf46	NM_181842.1	1151	aggtgaacccttaagaaca	129551	815102	or	-	-
10257	BCLB	NM_181844.2	239	ctctctctctctctctctct	129250	456223	-	-	-
10258	AMIG2	NM_181847.2	820	ctctctctctctctctctct	325908	691746	-	-	-
10259	CPEB2	NM_182485.1	710	ccctctctctctctctctct	433844	482092	-	-	-
10260	CPEB2	NM_182485.1	712	ccctctctctctctctctct	433845	482093	see also 10259 line	-	-
10261	CPEB2	NM_182485.1	1070	ccctctctctctctctctct	433856	482112	see also 10259 line	-	-
10262	CPEB2	NM_182485.1	1341	ccctctctctctctctctct	433865	482125	see also 10259 line	-	-
10263	USP12	NM_182486.1	206	tcctatgagcgtctcaattc	188874	702789	-	-	-
10264	USP12	NM_182486.1	815	gtctctctctctctctctct	188846	702808	see also 10263 line	-	-
10265	USP12	NM_182486.1	1203	agccattatctctcaattg	188863	702821	see also 10263 line	-	-
10266	FLJ40919	NM_182508.1	240	ttgcagaccctctctcaagc	434021	797393	-	-	-
10267	FLJ25161	NM_182522.2	846	ttgcagctgtcaataagcaca	434154	794293	-	-	-
10268	LOC200352	NM_182540.1	819	ttctttgtgtcaataagctatt	434254	480282	-	-	-
10269	MGC57341	NM_182559.1	571	caatggaggtataagctatt	182419	574799	-	-	-
10270	FLJ37306	NM_182559.1	573	gttggtataatgactataat	182420	574800	see also 10269 line	-	-
10271	FLJ36070	NM_182574.1	799	ttgaacttcaagccctcaaat	27389	453821	-	-	-
10272	SRPK2	NM_182691.1	744	caatgactgtgtgaagctatc	101280	515363	-	-	-
10273	SRPK2	NM_182691.1	747	taactgtgtgaagctatc	101281	515364	see also 10272 line	-	-
10274	SRPK2	NM_182691.1	748	acattgtgtgaagctatc	101282	515365	see also 10272 line	-	-
10275	SRPK2	NM_182691.1	2104	gaacactttatctactcttg	101317	515384	see also 10272 line	-	-
10276	FLJ37306	NM_182765.1	754	atggaactgtctcaagcacaag	435215	615240	-	-	-
10277	FLJ37306	NM_182765.1	1201	ctctcaatgacctctctcttt	435227	615954	see also 10276 line	-	-
10278	FLJ37306	NM_182765.1	1565	tgatttgacctctcaatctgga	435244	615270	see also 10276 line	-	-
10279	NIT13	NM_182767.1	1833	tgctttttatgacagabaa	255888	640078	neurotransmitters	-	-
10280	CHX10	NM_182894.1	533	gtgcagacagacagactctt	2261	442727	odium symporter	-	-
10281	CHX10	NM_182894.1	536	gtgcagacagacactcttccc	2262	442728	see also 10280 line	-	-
10282	ERG	NM_182918.1	770	aacacagaggtctcagctttat	3413	443485	transcription_regulat	-	-
10283	ERG	NM_182918.1	772	tcacagagaggtctcagctttt	3414	443486	or,	-	-
10284	ADAMTS9	NM_182920.1	4400	tttgtctgtgagcagataaacac	155867	787899	signal transduction	-	-
10285	FLJ20043	NM_182976.1	438	agccctctctctgagtagctatg	435563	707220	see also 10282 line	-	-
10286	FLJ20043	NM_182976.1	438	ccgagatctctctcagctcttgg	435565	707222	see also 10285 line	-	-
10287	FLJ20043	NM_182976.1	582	agcacactctctcagctcttgaat	435566	707223	see also 10285 line	-	-
10288	FLJ20043	NM_182976.1	676	atctcgaagtagctctctgaagc	435570	707224	see also 10285 line	-	-
10289	FLJ20403	NM_182976.1	737	aggccagcagcaggagctatgg	435571	707226	see also 10285 line	-	-
10290	GPRK2L	NM_182982.1	325	gattctctctctcaaaagtag	84258	503086	gpor,	-	-
10291	GSTO2	NM_183238.1	1133	acgtatctctctctctctctct	216873	804901	kinase related,	-	-
10292	GSTO2	NM_183238.1	1135	cgtatctctctctctctctct	216874	804902	see also 10291 line	-	-

(leukemia(白血病), Ewing sarcoma(尤文氏肉瘤), Ewing's sarcoma(尤文氏肉瘤), Ewing's sarcoma(尤文氏肉瘤))

図46 (続き)

[illegible]

図46 (続き)

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10334	FLJ25621	NM_198514.1	433	atgcagaggaatcatcagatag	438891	647627	-	-
10335	FLJ25621	NM_198514.1	434	tcacagagcatcatcagatag	438892	647628	see also 10334 line	-
10336	FLJ25621	NM_198514.1	838	tcacatcacagatcatcagat	438897	647634	see also 10334 line	-
10337	MG071806	NM_198516.1	1320	agctggagggcagctcaactaa	439339	784102	-	-
10338	ATP496	NM_198531.2	457	gggtttgtttgaactcaag	439241	495395	-	-
10339	FLJ30851	NM_198553.1	228	accocaaatttcgaagttaac	439485	788843	-	-
10340	MG057022	NM_198563.1	275	gtccgcagggagatgttttta	439533	736463	-	-
10341	MG057022	NM_198563.1	378	tgttcaactttactctcaact	439536	736465	see also 10340 line	-
10342	MG057022	NM_198563.1	711	tggatgtggcagcaattctcca	439546	736474	see also 10340 line	-
10343	FLJ32363	NM_198566.1	528	gcctcagatatttgaactcttc	439618	721628	-	-
10344	FLJ32363	NM_198566.1	529	ccctagatttttgcgaactcttc	439617	721629	see also 10343 line	-
10345	FLJ32363	NM_198566.1	735	cgcacatgatttaccagtaattt	439625	721636	see also 10343 line	-
10346	FLJ44716	NM_198587.1	2459	caacttcaactccaataaattt	439675	791827	-	-
10347	FLJ41410	NM_198581.1	2114	tacttccagctacttcaactaa	439792	479439	-	-
10348	RAB15	NM_198686.1	119	tcacacagctggttgaacttaa	439868	465005	-	-
10349	GABRG2	NM_198904.1	1436	tccaaagccctacacttgat	178750	571958	channel,	receptor activity,
10350	ALS2CR17	NM_198945.1	2982	cccttaaaagagctgattataa	440108	763975	signal transduction	-
10351	NAPE	NM_198990.1	939	agagctgtttctgaatacagc	440335	806817	-	-
10352	SVT10	NM_198992.1	1338	agcccccgtgttgaaagatatt	440368	857533	-	-
2A82/STA								
10353	C2	NM_198993.1	625	aacagagctctcagatgaatg	440386	648816	-	-
10354	PRES	NM_198993.1	810	tgcctagtgctgttgatttgg	440527	643578	-	-
10355	PRES	NM_198993.1	939	aagcgtacacttggaactcttc	440531	643582	see also 10354 line	-
10356	PRES	NM_198993.1	940	aagcgtacacttggaactcttc	440532	643583	see also 10354 line	-
10357	PRES	NM_198993.1	1179	gtgattgttgcgaacacttcc	440540	643591	see also 10354 line	-
10358	PRES	NM_198993.1	1463	gacacagcttcaggttttgg	440544	643598	see also 10354 line	-
10359	PRES	NM_198993.1	2191	tttgttctgttgacttaaacct	440568	643619	see also 10354 line	-
10360	DBCCRIL	NM_199051.1	438	agggatttgcacagatcaaac	440660	770051	-	-
10361	DBCCRIL	NM_199051.1	1010	tggcctactctgttcgaactc	440677	770069	see also 10360 line	-
10362	DBCCRIL	NM_199051.1	1131	aagcaactcttctgcgaactc	440683	770073	see also 10360 line	-
10363	DBCCRIL	NM_199051.1	1257	tgcatttgcgaacttgattct	440688	770080	see also 10360 line	-
10364	DBCCRIL	NM_199051.1	2350	caagacacttgcgaactaacct	440713	770100	see also 10360 line	-
10365	DBCCRIL	NM_199051.1	2352	agacacttgcgaactaacctc	440714	770101	see also 10360 line	-
10366	ATBFI	NM_006885.2	7604	agagcctgttgcgttcaactga	139	-	see also 4813 line	-
10367	GTF2IPD1	NM_005885.2	2501	gtcgtgttcccttaaacact	220	-	transcription regulator	-
10368	HIF1A	NM_001530.2	1097	agcgcctacttattgaactt	232	-	see also 1050 line	-
10369	ICSPBP1	NM_002163.1	454	tggacgtgtgtccttgcgaact	318	-	see also 1387 line	-
10370	MTF2F2	NM_016132.2	644	aggggtacagctccctgattgg	343	-	see also 9608 line	-

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10395	ATOH1	NM_005172.1	551	agcttaccctcttcacacac	1172	-	transcription_regulat	translation	regulator	-
10396	ATRX	NM_000489.2	7223	cgagctcttcattatgagca	1303	-	see also 379 line	-	-	-
10397	BAGH1	NM_001186.1	831	gctccctccagagacatcag	1323	-	transcription	-	-	-
10398	BAPX1	NM_001189.2	858	gcgcgcgcgcgcgcacatcc	1385	-	see also 771 line	-	-	-
10399	BARHL1	NM_020064.2	212	ttgagctgactcactctctcc	1386	-	transcription_regulat	or	-	-
10400	BARX1	NM_021570.2	854	tccgagacgaagagctcttccc	1371	-	transcription_regulat	or	transcription factor	-
10401	BARX2	NM_003856.3	193	aaggaaguctccgacttactttaa	1376	-	transcription_regulat	or	transcription factor	-
10402	BAZ1B	NM_023005.2	3145	cagctttgactaccgactcaacc	1450	-	or	-	-	-
10403	BCU6	NM_001706.2	679	gtgacacttcccggaagtttat	1488	-	see also 1132 line	-	-	-
10404	BHLHB2	NM_003670.1	1011	gagaaagctggcgaactaaag	1511	-	see also 2497 line	-	-	-
10405	BHLHB3	NM_003676.1	522	gccttccactcagatttcaacc	1531	-	see also 8938 line	-	-	-
10406	BNC	NM_001717.2	859	aggtctatccgcacacatata	1546	-	see also 1144 line	-	-	-
10407	BRD8	NM_006696.3	605	atggttgcctctctatagtttc	1586	-	see also 4727 line	-	-	-
10408	BRF1	NM_001519.2	1149	gagctcaacgaatttgagca	1644	-	transcription_regulat	or	-	-
10409	BTAF1	NM_003972.1	2492	ttgctatcgatgaacacacat	1720	-	transcription_regulat	or	transcription factor	-
10410	BTG2	NM_006763.2	161	gagcgcgcgcgcgcctgaagctc	1823	-	transcription_regulat	or	transcription factor	-
10411	C10orf1	NM_020527.1	803	ctggcgcgccttactcatttcgc	1842	-	-	-	transcription factor	-
10412	C10orf48	NM_173576.1	1188	cgagagcttccctatgaagcaga	1878	-	see also 10085 line	-	-	-
10413	C20orf17	NM_173485.2	2979	ctggcctctctctcgaacatca	1912	-	-	-	-	-
10414	CART1	NM_006962.1	1101	aagagcgcacccgcacatttc	1961	-	see also 4878 line	-	-	-
10415	CBFA2T1	NM_004349.2	1883	gtgctcctaaagcgttgaaacc	1983	-	see also 2910 line	-	-	-
10416	CBFA2T2	NM_005093.2	940	aagatctcgactcttgtttcttc	2005	-	transcription_regulat	or	-	-
10417	CBFA2T3	NM_005187.4	817	ttgctatcgatgaactttcttctc	2032	-	transcription_regulat	or	-	-
10418	CBFB	NM_001755.1	74	gagccctcagctgaagtaant	2034	-	transcription_regulat	or	-	-
10419	CBL	NM_005188.1	2321	cgagttgagactctacatctata	2097	-	see also 3644 line	-	leukemia(白血病)	-
10420	CCRN4L	NM_012182.2	743	ctggcttaccgcctctatatt	2113	-	transcription_regulat	or	transcription factor	-
10421	CDX2	NM_001265.2	724	aagagcgaagacaactatcagct	2139	-	transcription_regulat	or	transcription regulator	-
10422	CDX4	NM_005193.1	759	cgagctcctggagacactcaaca	2149	-	transcription_regulat	or	transcription factor	-
10423	CHD4	NM_001773.1	2019	ttggcgggctctctctctgata	2181	-	see also 838 line	-	-	-

図 4.6 (続き)

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10424	CHES1	NM_005197.1	265	ctcctcaatcaccgatgataaaga	2240	cell cycle, or,	transcription_regulator	translation regulator	-
10425	CRX10	NM_182894.1	453	cagctcgagctctgaagatgctt	2259	see also 10280 line	transcription_regulator	-	-
10426	CITED1	NM_004143.2	539	agctcgaggccgcacacttatgt	2264	or	transcription_regulator	transcription factor	melanoma(メラノーマ)
10427	CITED2	NM_006079.2	807	tgcagcagaagtctctatgtctc	2274	or	transcription_regulator	transcription factor	-
10428	CLOCK	NM_004898.2	2508	atgtaacctactactatcttat	2337	or	transcription_regulator	transcription factor	-
10429	CNO17	NM_013354.4	956	acggatagagaccacaacatcagg	2348	see also 3388 line	transcription_regulator	-	-
10430	CNO18	NM_004779.4	413	tcttgattctcatagatacaaat	2363	or,	transcription_regulator	-	-
10431	CREB3L1	NM_052854.1	1017	atggagagccgcctctgagagaag	2416	or	transcription_regulator	transcription factor	myelodysplastic syndrome(骨髄異形症候群)
10432	CREBBP	NM_004380.1	2205	ggagctcgcgtttacataaacaag	2467	see also 9436 line	transcription_regulator	transcription factor	Rubinstein-Taybi syndrome(ルビンスタン・ティ ビ症候群)
10433	CREB1.2	NM_001310.2	290	agatggtttgagagcaaatgaag	2523	or,	transcription_regulator	-	-
10434	CRX	NM_000554.2	762	atggctctcagctctctctatctt	2569	or	transcription_regulator	translation regulator	cone-rod dystrophy(錐体・桿体ジストロフィー)
10435	CSDA	NM_003651.3	567	aagataaacccacgaatatctct	2577	or	transcription_regulator	transcription co- repressor	-
10436	C10F	NM_005655.1	1766	cagtgatctagctcttgagaca	2613	or	transcription_regulator	-	-
10437	CUTL1	NM_001913.2	368	cagcgcctgcacgatattgaac	2630	see also 4603 line	transcription_regulator	-	leiomoma(血管紡錘)
10438	DLX1	NM_178120.2	805	cgccttggaacctcaactcttca	2674	or	transcription_regulator	-	-
10439	DLX2	NM_004005.2	18	cagctagtgctctgatgacact	2675	or	transcription_regulator	transcription factor	-
10440	DLX3	NM_005220.2	355	cagcgtcccccagccagcagattct	2678	or	transcription_regulator	transcription factor	-
10441	DLX5	NM_005221.3	629	gcgcaccaatgcgccttaactcgc	2694	see also 3662 line	transcription_regulator	-	-
10442	DMRT1	NM_021151.1	923	ggcctccctccggcactctatgtgc	2700	or	transcription_regulator	transcription factor	dementia(痴呆), gonadal dysgenesis(性腺發育異 常症)
10443	DMRT2	NM_006557.3	535	ggcctctccggagaacagatgaa	2703	or	transcription_regulator	-	-
10444	DMRT3	NM_021240.2	517	acgccaactccgcagcagcaataca	2734	see also 8142 line	transcription_regulator	-	-
10445	DMRTB1	NM_033067.1	980	ctgacccctctttgtactcaga	2751	or	transcription_regulator	-	-
10446	DMTF1	NM_021145.1	2044	caagctgatatgattatctgca	2814	see also 8108 line	transcription_regulator	translation regulator	-
10447	DR1.1	NM_005224.1	1768	tggagagataacggcatcatgtac	2839	or	transcription_regulator	-	-
10448	DSR1	NM_004414.4	653	atgcgaaccccatgcatacaact	2847	or,	transcription_regulator	transcription factor	Alzheimer disease(アルツハイマー病)

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10449	DSIP1	NM_004089.2	523	gcctgagaaacccctgttgaaga	2852	-	transcription_regulat or	-	-
10450	E2F1	NM_005225.1	949	gttgaaactcttgagaacatttca	2860	-	transcription_regulat or, apoptosis, cell cycle	E2F-1/DP- 1 complex	chondrosarcoma(軟骨肉腫)
10451	E2F2	NM_004091.2	1278	ctgagagaacacctgcagatatt	2870	-	transcription_regulat or, cell cycle	E2F-4/DP-1 complex	-
10452	E2F3	NM_001949.2	1398	cagcagctctcttgagcttgacg	2899	-	transcription_regulat or, cell cycle	translation regulator	-
10453	E2F4	NM_001950.2	772	aggaagctctcagctcaaatagt	2908	-	-	E2F-4/DP-1 complex	-
10454	E2F5	NM_001951.2	394	ctgtaatactaaagagctatag	2918	-	-	-	-
10455	E2F6	NM_001952.3	483	tgtgtatctgcctgtattttta	2948	-	see also 1240 line transcription_regulat or, cell cycle	-	-
10456	ELF1	NM_004424.2	1595	gtgcaagctctctcaagactaag	2955	-	transcription_regulat or	transcription factor	-
10457	ELF3	NM_004430.2	477	gcctacttgatgctctcaaat	2962	-	see also 2963 line transcription_regulat or	sodiumdicarboxylat e/tricarboxylate cotransporter	-
10458	ELF4	NM_001965.1	1057	cgcgcagcgcggagagttttctg	2975	-	transcription_regulat or	transcription factor	-
10459	ELF5	NM_0012153.2	947	cagccagactatcaaatattat	2986	-	see also 5151 line transcription_regulat or	-	-
10460	ELF1	NM_172373.2	1741	cagcaagctctctctcagaactg	3048	-	see also 10046 line transcription_regulat or	-	-
10461	ELF2	NM_006874.1	995	gagaaagagctgctcagatttgt	3083	-	see also 4810 line transcription_regulat or	-	-
10462	ELF3	NM_004433.3	4231	cgcgcagctctctcaagcttgc	3091	-	transcription_regulat or	-	-
10463	ELF4	NM_001421.1	656	atctcaacacgcgaagcttact	3095	-	transcription_regulat or	-	-
10464	ELF5	NM_001422.2	808	gagcagctctgcagagagcttact	3134	-	see also 994 line transcription_regulat or	-	-
10465	ELK1	NM_005226.2	573	gtgcccctctgctctatcacgc	3144	-	see also 3867 line transcription_regulat or	translation regulator	-
10466	ELK3	NM_005230.1	689	aagcagcagcgcgcacacpaaaca	3149	-	transcription_regulat or	-	-
10467	ELK4	NM_001973.1	216	atgactctgttgacctctatga	3156	-	transcription_regulat or	-	-
10468	EN1	NM_001426.2	1838	tgggttactgtgcacacttcttc	3186	-	transcription_regulat or	transcription factor	-
10469	EOMES	NM_005442.2	1400	gaggtctgtaagcgggttctaactc	3215	-	transcription_regulat or	transcription factor	-
10470	EP300	NM_001429.1	5911	cgcggatgagccaaatgatactaac	3348	-	see also 995 line transcription_regulat or	-	-
10471	ERF	NM_006494.1	370	agccctctgctctactctataac	3382	-	see also 4547 line transcription_regulat or	-	-
10472	ERG	NM_004448.2	62	agggcaactctgttttgattgt	3391	-	see also 2984 line transcription_regulat or	-	-
10473	ESR1	NM_000125.1	1233	tggccaacacccpactatgata	3423	-	receptor activity, transcription_regulat or	steroid binding	atherosclerosis(粥状硬化症), liposarcoma(脂肪肉腫), breast cancer(乳癌), estrogen resistance(エストロゲン抵抗)
10474	ESR2	NM_001437.1	494	gagcagcagctctctatctatccc	3437	-	see also 1005 line transcription_regulat or	-	-

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10475	ESRRB	NM_004452.2	501	ctgactgcgcacccactttgac	3461	-	transcription_regulat	steroid hormone	-
10476	ESRRG	NM_001138.1	774	aaftacacgcctcagatgagatgc	3468	-	or, see also 1008 line	receptor	-
10477	ESX1L	NM_153448.2	652	ggagagctgctatgagagacaa	3506	-	transcription_regulat	-	-
10478	ETS1	NM_005238.1	734	ccctctactccgactactctaa	3529	-	or see also 3672 line	-	-
10479	ETS2	NM_005239.2	344	atgactctcccaactcgaatttg	3538	-	transcription_regulat	Ets1 / Ets2 complex	leukemia (白血病), prostate cancer (前立腺癌), Ewing sarcoma (ユーンガ肉腫), Ewing's sarcoma (ユーンガ肉腫), Ewing's tumours (ユーンガ腫瘍)
10480	ETV1	NM_004958.2	1109	ggtaccacgcgcacgactctgga	3560	-	transcription_regulat	transcription factor	-
10481	ETV3	NM_005240.1	477	tcgttcaaatggtatgaatctaa	3577	-	or transcription_regulat	transcription factor	-
10482	ETV4	NM_001986.1	1258	ccctcgtcgtcgtactctatttg	3595	-	or transcription_regulat	transcription factor	-
10483	ETV5	NM_004454.1	1542	ggagagctgtagctctcaaatatt	3611	-	transcription_regulat	transcription factor	-
10484	ETV6	NM_001987.2	320	aaagagacttcctctctgatct	3621	-	or transcription_regulat	transcription factor	-
10485	ETV7	NM_016135.2	996	ctzgcgcactattataactctaa	3648	-	or see also 1267 line	specific RNA polymerase II	-
10486	EVX1	NM_001989.2	567	cgagacacgcagctggtttctat	3654	-	transcription_regulat	transcription factor	-
10487	FXH	NM_018418.2	2365	tggatgactgcctcattggtccc	3678	-	or see also 7459 line	transcription factor	-
10488	FXHL18	NM_004118.3	1038	ccggagccgcaggaattgtcttct	3692	-	transcription_regulat	transcription factor	-
10489	FLI1	NM_002017.2	906	ggagggcacacgcctcagtaag	3710	-	or see also 1298 line	-	-
10490	FLJ12287	NM_022367.2	1669	gggtgcgcgcgcgcactgatt	3741	-	or see also 8351 line	transcription_regulat	-
10491	FLJ12895	NM_023928.3	694	gggcatctcctctgataagctcc	3745	-	transcription_regulat	-	-
10492	FLJ21616	NM_024567.1	627	ctggcgcgcgcgcgcgcattac	3768	-	or see also 8645 line	transcription_regulat	-
10493	FLJ23814	NM_152895.2	643	ggggccaccggagctgaactatgg	3786	-	transcription_regulat	transcription_regulat	-
10494	FLJ25169	NM_152568.1	135	cgagacactctcgaattcttct	3802	-	or transcription_regulat	-	-
10495	FLJ25880	NM_153216.1	936	caftgatatcccccactatcaa	3815	-	or transcription_regulat	-	-
10496	FLJ30678	NM_144857.1	782	aggccacgaattaccataattat	3829	-	transcription_regulat	-	-
10497	FLJ33779	NM_182572.2	1417	ctgattggtccactccattgccc	3868	-	transcription_regulat	-	-
10498	FLJ35867	NM_152455.2	2062	cgaggtgcacgactcattaggca	3891	-	transcription_regulat	-	-
10499	FLJ35936	NM_173464.1	891	acgtctactgtgtcggttaatt	3914	-	transcription_regulat	-	-

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10500	FMINL2	NM_052905.1	1439	actcttcgggaactcaacaa		3959	-	transcription_regulat or	-
10501	FOSL2	NM_005253.2	1511	ggcctctatggttgaaccagg		4002	-	see also 3697 line	-
10502	FOXA1	NM_004486.2	395	cctcccgctgcagcacataaac		4006	-	translation regulator	-
10503	FOXA2	NM_021784.3	316	acccctgcagccacctgaatgac		4011	-	see also 8169 line	-
10504	FOXG1	NM_001453.1	1572	caggtaatgtagctctcaaatg		4026	-	transcription_regulat or	Axenfeld-Rieger anomaly(-), iridodentodysgenesis(-)
10505	FOXD1	NM_004472.1	1766	ctctccaagtctgcagaactttac		4030	-	transcription_regulat or	transcription factor -
10506	FOXD2	NM_004474.1	3357	gaggctctctctctcatagacc		4033	-	transcription_regulat or	transcription factor -
10507	FOXO3	NM_012183.1	1348	gtccacactctccgcagatttat		4036	-	transcription_regulat or	transcriptional activator
10508	FOXF2	NM_001452.1	1411	cagagcctctctcagatatctaa		4043	-	transcription_regulat or	transcription regulator
10509	FOXB1B	NM_005249.3	1458	actcccctgccctccatgaact		4049	-	see also 3690 line	-
10510	FOXH1	NM_003923.1	1542	ggagctgcctcgcgtctatagc		4062	-	transcription_regulat or	translation regulator
10511	FOXJ1	NM_001454.1	895	cgatgccaccttgccagatttaa		4065	-	transcription_regulat or	transcription factor -
10512	FOXLI	NM_005250.1	906	cgactctgcctgcctttcaaag		4069	-	transcription_regulat or	transcription factor -
10513	FOXM1	NM_021953.1	1151	tggcgcgcaggcggaagatgaag		4099	-	transcription_regulat or	translation regulator
10514	FOXN1	NM_003593.2	402	cgtctaagcaggctcttctctga		4112	-	transcription_regulat or	specific RNA polymerase II
10515	FOXOI.A	NM_002015.2	1712	cagtaacaatgactcagattatg		4149	-	see also 1233 line	transcription factor immunodeficiency(免疫不全症)
10516	FOXO3A	NM_001455.1	2648	ctatcagcagctctatagaacac		4181	-	see also 1014 line	-
10517	FOXP1	NM_032682.3	1423	alcctccctcagatctatgaacaa		4200	-	see also 9272 line	-
10518	FOXP2	NM_011491.1	1010	gaagctcagctgcctctactaac		4225	-	see also 5707 line	-
10519	FOXP3	NM_014009.2	864	gagaaaaggccagccacatctct		4247	-	transcription_regulat or	transcription factor diabetes(糖尿病)
10520	FOXP4	NM_138457.1	2032	tggcgcgcgcagctccctcagag		4255	-	see also 9622 line	-
10521	FOXQ1	NM_032680.2	588	gtccacgcacagacactctatag		4257	-	transcription_regulat or	-
10522	FUBP1	NM_003602.2	774	aagcttgttgtctattctatgta		4284	-	see also 2659 line	-
10523	G10	NM_003910.2	632	cagcagacagactctgatattt		4333	-	transcription_regulat or	transcription factor -
10524	GABPB2	NM_002041.2	377	gtggcagcagacacactactact		4338	-	see also 1317 line	-
10525	GASH1	NM_006530.2	270	aagtggtgtactactctttaaac		4369	-	see also 4564 line	-
10526	GAST	NM_003644.1	920	cagcgcacagctcaaatatttga		4405	-	transcription_regulat or, cell_cycle	-

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10527	GATA1	NM_002048.2	848	aagcgcctcgtatgcctgaacgc	4414	-	see also 1322 line	
10528	GATA2	NM_032638.3	1366	ccgcgcacctcttgcctcaattgt	4422	-	see also 9271 line	translation regulator
10529	GATA5	NM_080473.3	893	agcgcctcgtcctatgaagaag	4436	-	transcription_regulat	or
10530	GATA6	NM_005257.3	1662	atgcttcgcctctacatgaaa	4438	-	see also 3689 line	transcription_regulat
10531	GLI2	NM_005270.2	1253	ccgcacacccctcctcaagaaga	4449	-	or,	-
10532	GLI3	NM_001168.2	481	ggcgccttcctcaatcagctc	4461	-	see also 138 line	-
10533	GSH-2	NM_133267.1	398	tcgcctccgcgcgtatgaatcgc	4523	-	see also 9583 line	transcription_regulat
10534	GSH1	NM_145857.1	535	ggcgcgcgcgttcctcttaatat	4525	-	or	-
10535	GTF2A2	NM_004497.1	315	caaggcctctctcaaatcctaca	4531	-	see also 3043 line	transcription_regulat
10536	GTF2H3	NM_001516.3	535	gttcggttcgaatatacgaacttc	4559	-	transcription_factor,	translation factor,
10537	GTF2H4	NM_001517.3	264	ggcgcgttttgaccgcgtatctag	4569	-	or	transcription factor,
10538	GTF2I	NM_001516.2	978	atgcttcgcgcgttcactactct	4585	-	see also 1043 line	transcription factor
10539	HAND1	NM_004821.1	568	ggagcacctcagagcactaataca	4591	-	transcription_regulat	transcription factor
10540	HCF1	NM_005334.1	5339	gggcacacctccgtgcataaacc	4624	-	or	transcription factor
10541	HCL S1	NM_005335.3	668	aagcgcctctgcgttcctcaatga	4638	-	transcription_regulat	transcription factor
10542	HDAG1	NM_004964.2	870	tcgcttgatggtttcctcaatcaca	4672	-	transcription_regulat	transcription factor
10543	HDAC2	NM_001527.1	1110	tgcctacaacatccgtgaattgtg	4714	-	or,	transcription factor
10544	HEX1	NM_003865.1	432	aagcgcgtttcttcatttaagaaa	4725	-	see also 1047 line	transcription factor
10545	HEY1	NM_012258.2	286	cgcgcgcgcgcgcgcgcgcgcgcgc	4743	-	or	transcription factor
10546	HEY2	NM_012258.1	223	ggcgcgcgcgcgcgcgcgcgcgcgc	4758	-	see also 5239 line	transcription factor
10547	HEYL	NM_014571.2	348	ccgcgcgcgcgcgcgcgcgcgcgcgc	4768	-	transcription_regulat	transcription factor
10548	HFEX	NM_002728.2	621	ccgcgcgcgcgcgcgcgcgcgcgcgc	4776	-	or	transcription factor
10549	HIF3A	NM_022482.2	900	ctgttcgcgcgcgcgcgcgcgcgcgcgc	4785	-	transcription_regulat	transcription factor
10550	HIRA	NM_003328.3	2689	agcgcgcgcgcgcgcgcgcgcgcgcgc	4843	-	or,	transcription factor
10551	HIVEP3	NM_024503.1	2656	ccgcgcgcgcgcgcgcgcgcgcgcgc	4854	-	see also 2255 line	transcription factor
10552	HKR3	NM_005341.1	874	atgggcgcgcgcgcgcgcgcgcgcgcgc	4915	-	transcription_regulat	transcription factor
10553	HLX1	NM_021958.2	1106	cggttccttcgcgcgcgcgcgcgcgcgcgc	4929	-	transcription_regulat	transcription factor
10554	HLX99	NM_005515.2	844	gggcgcgcgcgcgcgcgcgcgcgcgc	4940	-	or	transcription factor
10555	HMC20B	NM_006339.1	819	ccgcgcgcgcgcgcgcgcgcgcgcgc	4971	-	transcription_regulat	transcription factor

pituitary hormone deficiency(脳下垂体ホルモン不足症), septo optic dysplasia(中隔視神経異常)

図46(続き)

10566	HMG82	NM_002129.2	353	aaggaggaagtcgaatttgaga	4976	transcription_regulat or	transcription factor	diabetes (糖尿病), diabetes mellitus (糖尿病)
10567	HNF4A	NM_000457.3	610	gcgacattcggcgcgaagaatt	4985	transcription_regulat or		
10568	HOXA1	NM_005522.3	182	gcgcctcagcccaacagttcc	4997	see also 3856 line		
10569	HOXA10	NM_018951.2	1202	gagctcaaacatcaacttaattt	5022	transcription_regulat or		
10569	HOXA3	NM_030661.3	1013	cggaaccgctgcttcctgaact	5058	transcription_regulat or		
10561	HOXA4	NM_002141.2	658	gcgcctctcaaccgcctataaac	5063	transcription_regulat or		
10562	HOXA5	NM_018102.2	599	atcccaagcgcgcacatactca	5072	see also 7108 line		
10563	HOBX1	NM_002144.2	116	agcgcctctgaacgtactcaaac	5094	transcription_regulat or	PBX1, HOXB1 heterodimer	
10564	HOBX13	NM_006361.2	354	cagctccgcctgcttatgtatcc	5098	transcription_regulat or	transcription factor	
10565	HOBX2	NM_002145.2	232	aaggatcgagcatattactccc	5108	transcription_regulat or	transcription regulator	
10566	HOBX3	NM_002146.3	1501	ccgcctcgcgcctgagagtgctg	5116	transcription_regulat or	transcription factor	
10567	HOBX5	NM_002147.2	200	cgctctcagctacataactca	5127	see also 1371 line		
10568	HOBX6	NM_018952.3	420	atctcgaccccgctgagcattac	5131	transcription_regulat or		
10569	HOBX7	NM_004502.2	338	tcgagccgagttccttcaacatg	5133	transcription_regulat or	transcription factor	
10570	HOBX10	NM_017409.2	91	atcgactctccctcgcaatgaac	5153	transcription_regulat or	transcription factor	
10571	HOBX11	NM_014212.2	800	aagcctgcctccctatctcaaat	5168	transcription_regulat or	transcription factor	
10572	HOBX9	NM_006897.1	504	cagctaacccgctacactgacg	5201	transcription_regulat or	transcription factor	
10573	HOBX1	NM_024501.1	912	gcgcgcctccacgaatttcagc	5205	see also 4823 line		
10574	HOXD13	NM_006523.2	867	aggagatgctgcttaactaaccg	5233	transcription_regulat or	transcription factor	
10575	HOXD3	NM_006898.4	225	atgcgaagctgctgtctactatga	5235	transcription_regulat or	transcription factor	
10576	HOXD8	NM_019559.2	1028	acgctgaactgaactacagaga	5243	transcription_regulat or	transcription factor	
10577	HOZF1P	NM_152995.3	1989	cttctgagccctcctctctgtaa	5306	transcription_regulat or		
10578	HR	NM_005144.2	3794	ggccatctgaacgaatacaactgg	5328	transcription_regulat or	alopecia universalis (全身性脱毛症), strichia (毛症)	

図46(続き)

表4-6 (続き)

					transcription_regulat or	heat shock transcription factor 1B	
10579	H5F1	NM_005526.1	1641	5334	-	-	
10580	H5F2	NM_004506.2	203	5338	see also 3083 line	-	
10581	H5FY	NM_033108.1	214	5366	transcription_regulat or	-	
10582	HSRNAFE V	NM_017521.1	791	5385	transcription_regulat or	-	maxillary tumor(上顎癌), paraspinal neurogenic tumor(傍脊神経性腫瘍), Ewing sarcoma(ユ ーイング肉腫), Ewing's sarcoma(ユーイング肉腫)
10583	HTLF	NM_002158.2	1053	5408	transcription_regulat or	-	
10584	ILF1	NM_004514.2	600	5424	transcription_regulat or	-	
10585	IPF1	NM_000209.1	635	5448	-	translation regulator	diabetes mellitus(糖尿病), pancreatic aplasia(膵臓形成不全), diabetes(糖尿病), maturity-onset diabetes of the young(若年性の 成人病)
10586	IRF1	NM_002198.1	283	5454	see also 1402 line	-	
10587	IRF2	NM_002199.2	289	5460	transcription_regulat or	RNA polymerase II transcription factor or translation regulator	arthritis(関節炎)
10588	IRF3	NM_001571.1	429	5479	-	-	
10589	IRF4	NM_002480.1	1378	5494	transcription_regulat or	translation regulator	chronic myeloid leukemia(慢性骨髄性白血病)、 non-hodgkin lymphoma(非ホジキンリンパ腫)、 leukemia(白血病), multiple myeloma(多発性骨髄 瘤)
10590	IRF5	NM_002200.3	412	5502	transcription_regulat or	-	polioidal pterygium syndrome(贅贅眼状片産隆 群), Van der Woude syndrome(ファン・デ・ワウデ症)
10591	IRF6	NM_006147.2	1450	5524	transcription_regulat or	-	
10592	IRF7	NM_001572.2	1560	5532	-	-	
10593	IRX1	NM_024337.1	1605	5537	-	-	
10594	IRX3	NM_024336.1	1173	5540	-	-	
10595	IRX5	NM_005853.2	1586	5558	-	-	
10596	ISGF3G	NM_006084.3	547	5561	transcription_regulat or,	translation regulator	
10597	ISL1	NM_002202.1	1189	5587	see also 1403 line	-	
10598	ISL2	NM_145805.1	110	5591	see also 9801 line	-	
10599	JUN	NM_027228.2	1032	5600	see also 1424 line	-	
10600	KIA00669	NM_014731.31	2779	5637	see also 5951 line	-	
10601	KIA00683	NM_014913.31	2941	5705	-	-	
10602	KIA01041	NM_014947.1	1603	5772	-	-	
10603	KIAA1443	NM_020833.1	1564	5801	see also 6138 line	-	
10604	KIAA1474	NM_020956.1	1963	5831	-	-	
10605	KIAA1618	NM_020956.1	1614	5874	see also 7998 line	-	
10606	KIAA1618	NM_020956.1	1614	5874	-	-	

図4.6 (続き)

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10606	KLF12	NM_007249.3	493	ccggaggaactcttctcttctgaga	5918	-	see also 5050 line	-	-
10607	KLF3	NM_016531.2	901	gtgaatccccggagactcaag	5964	-	see also 6907 line	-	-
10608	KLF4	NM_004235.3	1115	gcacagctgcccaagactcaagc	5975	-	transcription_regulat	translation	or
10609	L3MBTL	NM_015478.4	1971	acgcctccgaatctcgasaga	6014	-	transcription_regulat	-	-
10610	LASS2	NM_013384.3	503	atgcgcgactcttgataaac	6023	-	or	-	-
10611	LASS3	NM_178842.2	777	tacgaatcggcgaatcaagaga	6063	-	see also 5416 line	-	-
10612	LASS4	NM_024552.1	1292	aaggaactctcgtgatctgaga	6095	-	transcription_regulat	-	-
10613	LASS5	NM_147190.1	957	gaataactcggcgccttatgttc	6125	-	transcription_regulat	-	-
10614	LBX1	NM_006562.3	564	gcctttctatccagaagctacc	6134	-	transcription_regulat	-	-
10615	LHX1	NM_005568.2	1227	gaagcgcggagcaagcttcc	6138	-	transcription_regulat	transcription factor	-
10616	LHX5	NM_022363.2	1259	cajaaacgcagctccaaagacg	6177	-	transcription_regulat	transcription factor	-
10617	LHX6	NM_014368.2	80	gcaccacccgcgtctctgaagc	6179	-	or	-	-
10618	LHX9	NM_020204.2	666	aagctctcgacacgtactatct	6184	-	transcription_regulat	-	-
10619	LMO4	NM_006769.2	1083	gaagcgcgaagcaatgctatc	6206	-	see also 4775 line	-	-
10620	LMX1A	NM_177398.1	517	agggcatcgtcccaatgagttt	6216	-	transcription_regulat	-	-
10621	LMX1B	NM_002316.1	381	acgcaagcgcagcgaatctgc	6226	-	transcription_regulat	translation	or
10622	LOC51270	NM_016821.2	493	gcgagctatgcgaagctcaga	6229	-	transcription_regulat	regulator	-
10623	LZT51	NM_021020.1	288	gcagcagcgcgagactctctct	6237	-	or, cell cycle	-	-
10624	MADH3	NM_005902.1	390	gtgagatgcctctccaataga	6252	-	see also 8067 line	Smad3/Sp-1	-
10625	MADH4	NM_005359.3	1711	agggctctgcgtctatgata	6303	-	or	heterodimer	-
10626	MAFG	NM_002359.1	641	cagcgtatcccaatgatgaagt	6312	-	see also 3736 line	-	-
10627	MAX	NM_137951.1	208	aagcgaacggagcttcaact	6313	-	see also 1524 line	-	-
10628	MBD1	NM_002384.1	223	tggcgtctcagacacctctaac	6322	-	transcription_regulat	transcription factor	-
10629	MDS1	NM_004991.1	548	ttggaactcgaagctcaaatag	6351	-	or	-	-
10630	MEF2A	NM_005587.1	648	cagacacacactcgatattgtg	6362	-	transcription_regulat	translation	-
10631	MEF2C	NM_002397.2	428	ggatgatattgagcactgaaca	6391	-	or	regulator	-
10632	MEIS1	NM_002398.1	427	tacgcgtcttgcgaacagatt	6416	-	see also 1542 line	-	-
						-	see also 1545 line	-	-

nail patella syndrome(爪-膝蓋骨症候群)

myelodysplasia syndrome(骨髓形成不全症候群)
adriamycinosis(Adriamycin 中毒), coronary artery disease(冠動脈疾患)

図4.6 (続き)

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10633	MEIS2	NM_002399.2	1408	atgtatggcagcgaactcagc	6447	-	see also 1556 line	transcription_regulat	or	-
10634	MEOX1	NM_004527.2	410	aggagccacggcgcgactacg	6463	-	transcription_regulat	or	-	-
10635	MEOX2	NM_005924.2	1019	cagcaaacacggcgcctctatagc	6472	-	transcription_regulat	or	transcription factor	atherosclerosis(粥状硬化症)
10636	MLL	NM_005933.1	10453	caagcggtagacgctcctaag	6736	-	transcription_regulat	or	zinc binding	leukemia(白血病)
10637	MLL2	NM_003482.1	14807	aggccacgcgcattcttggcgc	6864	-	transcription_regulat	or	-	leukemia(白血病)
10638	MLL4	NM_014727.1	8124	gcctcctcgtctcttbaact	6955	-	transcription_regulat	or	zinc binding	-
10639	MLLT10	NM_004641.1	7329	tgtgcctgatactcctaact	6974	-	see also 3155 line	transcription_regulat	or	transcription factor
10640	MLLT2	NM_005935.1	2209	aggcaaaccttggacaacaaca	7049	-	see also 4146 line	transcription_regulat	or	transcription factor
10641	MLLT7	NM_005938.1	555	gaatgagtcgtcgtactaac	7078	-	transcription_regulat	or	transcription factor	-
10642	MNT	NM_020310.1	1081	gcgcctgacgcgtgaagattg	7088	-	transcription_regulat	or	transcription factor	-
10643	MSC	NM_005998.2	814	atgttggcaacacgccttaaatgc	7093	-	transcription_regulat	or	transcription factor	hypodontia withorofacial cleft(顔面裂), hypodontia(小顎症), Witkop syndrome(ワットコンブ症候群)
10644	MSX1	NM_002448.1	7111	ctgcacccctcgcgaacacaga	7097	-	transcription_regulat	or	transcription factor	craniosynostosis(頭蓋骨縫合早期癒合症)
10645	MSX2	NM_002449.3	749	ctgcagcagcgtcctatagc	7105	-	transcription_regulat	or	transcription factor	-
10646	MTA1	NM_004695.2	1329	caggaccacacgcgtgaatcag	7122	-	see also 3218 line	transcription_regulat	or	-
10647	MTA2	NM_004739.2	1821	acgctcgtactcctcatcag	7156	-	see also 3269 line	transcription_regulat	or	-
10648	MYBL2	NM_002466.2	975	caggagccatcgtgcagatct	7221	-	transcription_regulat	or, apoptosis, cell cycle	transcription factor	neuroblastoma(神経芽細胞腫)
10649	MYC	NM_002467.2	1673	ttagcaagctacgaactctgt	7240	-	see also 1586 line	transcription_regulat	or	-
10650	MYCL2	NM_005377.1	1072	aagcgaagcaatcctcatcga	7251	-	transcription_regulat	or	transcription factor	rhabdomyosarcoma(悪性横紋筋肉腫), lung cancer(肺癌), neuroblastoma(神経芽細胞腫), retinoblastoma(網膜芽腫), osteosarcoma(骨肉腫), astrocytic tumor(星状細胞腫)
10651	MYCN	NM_005378.3	1363	atgcgcgagtgcgaagatga	7263	-	transcription_regulat	or	transcription factor	-
10652	MYF6	NM_002469.1	455	gcgcgaagccatcactatattg	7265	-	transcription_regulat	or	Myf6/E47	-
10653	MYNN	NM_018657.2	943	aagaaactcactatataata	7294	-	see also 7538 line	transcription_regulat	or	-
10654	MYOG	NM_002479.2	86	caggaaacccgcctctatagc	7324	-	transcription_regulat	or	Myf4/E47	-
10655	MYST2	NM_007067.3	642	ccgtccttcattgaagctaca	7334	-	transcription_regulat	or	-	-
10656	MYT1	NM_004535.1	2015	caagtcgagtcctcctcatcgtg	7366	-	see also 3089 line	transcription_regulat	or	-
10657	NFAT5	NM_006999.2	2353	tgcagctctgaggattgaaa	7432	-	see also 4634 line	transcription_regulat	or	-

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図46 (続き)

10658	NFATC1	NM_006162.3	2049	ctgtccgaactctgaactca	7528	-	transcription_regulat	-	
10659	NFATC2	NM_012340.2	1809	aaggcagagccgcgcattgagga	7559	-	transcription_regulat	-	
10660	NFATC3	NM_004555.2	2923	cgactctgtctcgttgacaacc	7644	-	transcription_regulat	-	
10661	NFE2	NM_006163.1	698	cagatccgactcgtgattctcc	7687	-	see also 4264 line	-	
10662	NFE2L1	NM_003204.1	725	gggcccagttcgtcctactca	7703	-	see also 2167 line	-	
10663	NFE2L2	NM_006164.2	624	cagatgccccctgtttattaga	7741	-	see also 4266 line	-	
10664	NFE2L3	NM_004289.4	78	ccgcgtagacttagactcttacc	7769	-	transcription_regulat	-	
10665	NFE4	NM_005595.1	683	ctgttaaggaactcgtattattc	7848	-	see also 3883 line	-	
10666	NFB	NM_005596.1	966	atgaactcgggttcactctca	7882	-	transcription_regulat	Nuclear factor 1	
10667	NFC	NM_005597.1	854	gtggagcgaacccgcacaactcg	7891	-	transcription_regulat	C-type-7	
10668	NFL3	NM_005384.1	868	aagcaagccgcgcgtgaataga	7916	-	transcription_regulat	-	
10669	NFKB1	NM_003988.2	1101	gtgtgactcctcgtttcaagc	7954	-	see also 2724 line	-	
10670	NFKB2	NM_002502.2	307	agagagcttcctcgtttcgtatg	8010	-	transcription_regulat	transcription factor	Humatoid arthritis (類風湿性マチ).
10671	NFKB1	NM_002504.3	2135	cgcttctgtcggcgacataatg	8070	-	see also 1613 line	-	
10672	NFYA	NM_002505.3	668	agggcagacacatcgtctcaac	8110	-	transcription_regulat	-	
10673	NFYB	NM_006166.2	665	atgtttcacacaactatcata	8122	-	see also 4269 line	-	
10674	NFYC	NM_014223.2	576	ggatttcgcagctcgtgaactcc	8139	-	transcription_regulat	NF-YA/NF-YB/NF-YC	
10675	NKX2-2	NM_002509.2	683	acgagtcacccgacaatgacaag	8148	-	transcription_regulat	RNA polymerase II	
10676	NKX2-3	NM_145285.1	370	aaagcagagccgcggaattgtcc	8153	-	transcription_regulat	transcription factor	
10677	NKX2-8	NM_014360.2	223	gtgcgcagctcttagatttacc	8160	-	transcription_regulat	-	
10678	NKX3-1	NM_006167.2	336	aaggcactctgggtctctatctt	8163	-	transcription_regulat	-	
10679	NKX6-1	NM_006168.1	803	ggctcctttgacctatctgtg	8173	-	transcription_regulat	transcription factor	
10680	NME2	NM_002512.1	482	aagcaactcttgaactacaagct	8177	-	kinase related, transcription_regulat	translation	neuroblastoma (神経芽細胞腫)
10681	NPAS1	NM_002517.2	699	cagcagctcttctgaactccttc	8182	-	or, cell cycle	transcription_regulat	
10682	NPAS2	NM_002518.2	2204	tgctctcccgcaagtcgactct	8208	-	see also 1618 line	transcription factor	

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図46 (続き)

10683	NR0B1	NM_000475.2	646	gtzccacgagacacaaataacg	8219	-	receptor activity, transcription_regulat	steroid hormone receptor	Addison disease(アジソン病), adrenal hyperplasia(副腎皮質過形成), dosage-sensitive sex reversal(DSS), DSS-AHC, critical region on the X chromosome gene(DAX1)
10684	NR0B2	NM_001989.1	460	ctcggctgcagctgcctcaatgc	8230	-	transcription_regulat	transcription co- repressor	obesity(肥満)
10685	NR1D1	NM_001724.1	1940	ctgcgcccaatgacacaaaccc	8234	-	transcription_regulat	transcription co- repressor	-
10686	NR1H2	NM_007121.1	1215	caagagctatccctctcttgaa	8245	-	transcription_regulat	steroid hormone receptor	atherosclerosis(粥状硬化症)
10687	NR1H4	NM_005123.1	481	tggaaccactatcgcaatacagc	8254	-	transcription_regulat	translation regulator	-
10688	NR1I2	NM_003889.2	2570	ctgcacatgcaacctacatgttc	8287	-	receptor activity, transcription_regulat	-	-
10689	NR1I3	NM_005122.2	815	cgggcctcttcgtcacacatg	8301	-	transcription_regulat	translation regulator	-
10690	NR2C1	NM_003297.1	747	agctcaacagcagctgttagatc	8330	-	transcription_regulat	transcription co- activator	-
10691	NR2C2	NM_003298.2	488	caagcgcacagcaactcatatca	8375	-	transcription_regulat	transcription co- activator	-
10692	NR2E1	NM_003299.2	1515	gaagctgctctcgatttagaca	8439	-	transcription_regulat	transcription_regulat	-
10693	NR2E3	NM_014249.2	953	ggagcgcagcagcaactcttct	8456	-	receptor activity, transcription_regulat	-	-
10694	NR2F1	NM_005854.3	422	agagagctccpccaggaactaac	8463	-	receptor activity, transcription_regulat	translation regulator	-
10695	NR2F2	NM_021005.2	1803	tgagcctatgacgaattcaata	8479	-	transcription_regulat	transcription_regulat	-
10696	NR3C1	NM_000176.1	2043	ctgcattgcacacagtgaac	8524	-	transcription_regulat	transcription_regulat	-
10697	NR3C2	NM_000801.1	1932	tggttatccgtctctagaataca	8587	-	receptor activity, transcription_regulat	Smad3/Sp-1 heterodimer	pseudohypoadosteronism(偽性アルドステロン 症)
10698	NR4A1	NM_002135.3	798	tcgcgcacagcagcttcaagaag	8614	-	receptor activity, transcription_regulat	-	atherosclerosis(粥状硬化症)
10699	NR4A2	NM_006186.2	883	ctgcaccccgctctctctcttc	8634	-	transcription_regulat	transcription_regulat	-
10700	NR5A1	NM_004595.3	451	gaattttgcgcagcaactgttc	8693	-	transcription_regulat	transcription_regulat	-
10701	NR6A1	NM_001489.2	1500	gctctccgcagctctgcagata	8721	-	transcription_regulat	transcription_regulat	-
10702	NT5C	NM_014595.1	347	cggaacgcagcagctctatctgc	8724	-	transcription_regulat	transcription_regulat	-
10703	NY-BIS-1	NM_052997.1	308	tgatctctgctgcagataaant	8729	-	transcription_regulat	transcription_regulat	-

図46 (続き)

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10704	ODAG	NM_021187.2	752	ttatccgcgcctctctatcata	8751	-	transcription_regulat	-
10705	ONEUT2	NM_004859.1	1160	ccctggagtaactctcaatcttgg	8774	-	or	-
10706	OTX1	NM_014582.2	249	atgctgctactctcaacaccc	8783	-	see also 3372 line	-
						-	see also 5764 line	-
10707	P1P37306	NM_019110.3	1888	ggagctccgcgcgtctcttaastg	8812	-	molecular function	-
						-	unknown	-
10708	p86alpha	NM_017860.2	531	aagctgcgcgcgaatcaaatata	8816	-	transcription_regulat	-
10709	P66beta	NM_020099.1	1254	ctgcagcttgaacctctttatg	8839	-	or	-
						-	see also 7924 line	-
10710	PAX4	NM_006193.1	314	accgattccttaagttctcttaastg	8884	-	transcription_regulat	-
						-	transcription factor	-
10711	PAX7	NM_002584.1	614	cgcgcacggtacccgcgaatgatgc	8939	-	transcription_regulat	-
10712	PBX1	NM_002585.1	1285	tcgcacacgctcagatgcattcagct	8969	-	or, apoptosis	-
10713	PBX2	NM_002586.3	1414	agggcgctctgtgtgataaacctcgc	8974	-	see also 1663 line	-
10714	PBX3	NM_006195.2	945	caaagtccacagttatccaatttgg	8991	-	see also 1664 line	-
						-	see also 4281 line	-
10715	PBX4	NM_025451.1	392	ctgtccacagatccgcagattta	9003	-	transcription_regulat	-
10716	PEG3	NM_006210.1	4290	atgatttcaggctctctctact	9108	-	or	-
						-	receptor activity	-
10717	PGBD1	NM_032807.2	2170	tggatttaagggaactctatgaa	9149	-	transcription_regulat	-
10718	PGR	NM_000926.2	1591	ctgaatttcggcatcacctctct	9172	-	or	-
10719	PHF2	NM_005392.2	2194	tggacttcggctctctcagaggt	9255	-	see also 803 line	-
						-	see also 3763 line	-
10720	PHF1	NM_006008.1	81	ggacttaagatcagcagatattgg	9273	-	transcription_regulat	-
10721	PIL6	NM_012228.2	337	gcgacttcactctctcagttct	9344	-	or	-
						-	transcription factor	-
10722	PITX2	NM_000325.4	882	gcgcgcagaccctcgtctagaag	9349	-	-	-
10723	PKNOX1	NM_004571.3	952	atgttgattctcttaagaacaag	9387	-	see also 3110 line	-
10724	PKNOX2	NM_022062.1	198	ctgcacagcggcgtctgtatcagg	9398	-	see also 8258 line	-
10725	PLAG1	NM_002855.1	1003	aagctgcgtctggttgattgaag	9422	-	see also 1736 line	-
10726	PLAG2	NM_002857.2	597	gcgttaagaattacaatacgaag	9456	-	see also 1738 line	-
10727	PLU-1	NM_006618.2	2868	cggttttcagaactcattcagtt	9501	-	see also 4679 line	-
						-	transcription_regulat	-
10728	POLR21	NM_006233.3	145	acgccttcgcgaactctattac	9602	-	or	-
						-	zinc binding	-
10729	POLR3K	NM_016310.2	120	gtgcaccttcagctcacaacata	9606	-	transcription_regulat	-
						-	transcription factor	-
10730	POU1F1	NM_000306.1	563	aggttaacaccagcaaatcttgc	9616	-	transcription_regulat	-
10731	POU2F1	NM_002897.1	937	ggctctcgtctgtgggaactata	9639	-	Proto-oncogene	-
						-	O-JUN	-
						-	see also 1755 line	-

iridogenodysgenesis(-), iris hypoplasia with
glaucoma (線内腫に伴う虹彩形成不全)、Rieger
syndrome (Rieger症候群)、Peters anomaly (ピ
ターズ奇形)

pituitary hormone deficiency (脳下垂体ホルモ
ン不足症)、pituitary dwarfism (下垂体性小人症)

図46 (続き)

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10732	POI2E3	NM_014352.1	221	atgctcggaacacaaactctcgg	9872	transcription_regulat	-
10733	POI2F4	NM_003097.1	385	cggacacagacccctctctcagg	9884	or	-
10734	POI4F3	NM_002700.1	859	ggctctcctcagggcctcttcgg	9711	see also 284 line	-
10735	POI5F1	NM_002701.1	127	ggggcacacagtagctcttcgaat	9713	see also 1759 line	-
10736	PPARA	NM_005036.2	499	ggcatttgacactcgaatgata	9728	or	-
10737	PPARD	NM_006238.2	1186	cagtttaccctctcaagatag	9750	receptor_activity,	-
10738	PRDM1	NM_001198.2	1344	cggagctctcctcagcttactctga	9826	transcription_regulat	-
10739	PRDM16	NM_022114.1	3599	acagaaagcgtctcttgtagcttg	9878	or,	-
10740	PRDM2	NM_012231.2	5752	asgaacagacacgcttgaatataa	9991	see also 774 line	-
10741	PRRX1	NM_006902.2	1323	agggaatagggaacaccttcataag	9999	see also 8274 line	-
10742	RARA	NM_000964.1	241	cagcttcacgttaatgataatag	10011	transcription_regulat	-
10743	RARB	NM_000965.2	1310	acgctctaccctcaactcaact	10038	or,	-
10744	RARG	NM_000966.3	1644	aggccagagctcctccctaatc	10060	receptor_activity,	-
10745	RAX	NM_013435.1	297	aggccatctcggaggttaccacag	10082	heterodimer	-
10746	RB1	NM_000321.1	2108	tggctatctcggctcctaatata	10121	transcription_regulat	-
10747	RBBP1	NM_002892.2	1311	ctgcgtctcggaattctcgt	10190	RNA polymerase II	-
10748	RBBP2	NM_005056.1	3322	ctggcggacgtctcttaagaag	10331	transcription_factor	-
10749	REL	NM_002908.1	1906	ggctggagacatacaaacagtac	10420	transcription_factor	-
10750	RELA	NM_021975.1	1482	ggatccctcggctcttaactcag	10443	see also 1940 line	-
10751	RELB	NM_006509.2	994	ggagccctctctgcagaatc	10446	see also 8236 line	-
10752	RERE	NM_012102.2	1191	atgttactactcgtcaatctcggg	10454	see also 4552 line	-
10753	RF5	NM_000449.2	493	atgtgtcctactcggatctctgt	10497	transcription_regulat	-
10754	RLF	NM_012421.1	3986	aaagctcttaattgcattacaga	10639	or	-
10755	RNF110	NM_007144.2	636	cagctctctctcgttaattcag	10701	transcription_regulat	-
10756	RORA	NM_002943.2	1369	gttactctttcggaggtctac	10746	or	-
10757	RUNX1	NM_001754.2	1056	aagcctcctcggaacaaactagtg	10842	see also 1984 line	-
						transcription_regulat	-
						transcription factor	leukemia (白血病), familial platelet disorder with associated myeloid malignancy (FPMMD)

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10758	RXRB	NM_021976.3	1496	ctccctgaagccatccctgt	10884	receptor activity, transcription_regulator or transcription_regulator	retinoid X receptor beta-1 Retinoid acid receptor RXR-	Parkinson disease(パーキンソン病), schizophrenia(精神分裂病), Parkinson disease(パーキンソン病), schizophrenia(精神分裂病)
10759	RXRG	NM_006917.2	633	aagcaactcaagcctacaaagtc	10899	transcription_regulator or transcription_regulator	transcription factor	-
10760	SATB1	NM_002971.2	1376	gttgatgacgcatgaactgaac	10949	transcription_regulator or transcription_regulator	-	-
10761	SATB2	NM_013265.1	634	caaccccaacgcatcaccaca	10985	transcription_regulator or transcription_regulator	-	-
10762	ISLF	NM_006973.2	1403	aagcagcagcactatataaga	11043	transcription_regulator or transcription_regulator	see also 8294 line	-
10763	SCAND2	NM_022050.2	450	caagactcttcagtaaaagatct	11071	transcription_regulator or transcription_regulator	-	-
10764	SCMH1	NM_012238.1	1190	cgagaccaccagaccctaatc	11088	transcription_regulator or transcription_regulator	-	-
10765	SCMH1	NM_006746.2	845	ctgtgtgtcaacgtatggtct	11108	transcription_regulator or transcription_regulator	-	-
10766	SCMH2	NM_006089.1	1098	gagaccgctgcattgtatataa	11141	transcription_regulator or transcription_regulator	-	-
10767	SCRT1	NM_031309.2	450	cggcgcagaccctctcttcaccc	11161	transcription_regulator or transcription_regulator	small cell lung cancer(肺がん), non-small-cell lung cancer(非小細胞肺癌)	-
10768	3	NM_005786.3	4342	cagtcaaacctcacctcagtgaag	11196	transcription_regulator or transcription_regulator	-	-
10769	SIM1	NM_005068.2	1176	ctgactgcatgaacgtacacatg	11218	transcription_regulator or transcription_regulator	see also 3536 line	-
10770	SIX1	NM_005982.1	533	gtgctctaaagcctcattgaagtc	11276	transcription_regulator or transcription_regulator	see also 4179 line	-
10771	SIX2	NM_016932.3	394	gagcacccttcacagatcaag	11282	transcription_regulator or transcription_regulator	transcription factor	-
10772	SIX3	NM_005413.1	1359	gcagctcgaaatgagatgata	11290	transcription_regulator or transcription_regulator	transcription factor	-
10773	SIX6	NM_007374.1	296	cagcgagctctacatcctctg	11343	transcription_regulator or transcription_regulator	transcription factor	-
10774	SLC26A3	NM_000111.1	440	gtggcgcgtactacaagctttagc	11360	transcription_regulator or transcription_regulator	transcription factor	-
10775	SLC24A4R	NM_020069.2	565	cagagcagccacccctctctgtt	11443	transcription_regulator or transcription_regulator	-	-
10776	SLC30A9	NM_006345.2	1272	aagctgtctctctctcacaatg	11479	transcription_regulator or transcription_regulator	see also 4439 line	-
10777	SLC38A2	NM_018976.3	1573	tggcgtcatagctcatcacaagt	11550	transcription_regulator or transcription_regulator	see also 7623 line	-
10778	SLC38A6	NM_153811.1	324	atgctcaaacgcgtgctcttgg	11560	transcription_regulator or transcription_regulator	-	-
10779	SLC4A10	NM_022058.2	2394	tgttttttgcgtcttgatgctc	11652	transcription_regulator or transcription_regulator	translation regulator	-
10780	SMARCA4	NM_003072.2	3623	tgcctatgcgcgtcttaaatcc	11694	transcription_regulator or transcription_regulator	transcription factor	-
10781	SNAPC2	NM_003083.1	246	caggagagcattcaaaaatgac	11704	transcription_regulator or transcription_regulator	-	-
10782	SNAPC4	NM_003086.1	3202	cagggtcccaacgctctaaatgt	11730	transcription_regulator or transcription_regulator	transcription factor	-
10783	SNAPC5	NM_006049.1	95	aagaattatgcctccatcaatg	11737	transcription_regulator or transcription_regulator	transcription factor	-
10784	SNFT	NM_018664.1	536	ctgctcgcctatgaactctgt	11745	transcription_regulator or transcription_regulator	-	-

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10785	SOX13	NM_005686.1	305	tgagctctcaacgaattgaaa	11750	-	transcription_regulat or	transcription_regulat	transcription factor	diabetes(糖尿病)
10786	SOX14	NM_004189.2	728	ctatcatagaccattttgtctca	11756	-	transcription_regulat or	transcription_regulat	transcription factor	-
10787	SOX2	NM_003106.2	1060	caagctcgaagctctcaatgacg	11757	-	transcription_regulat or	transcription_regulat	-	anophthalmia(無眼球症)
10788	SOX5	NM_006940.4	1397	ctgtccagcagcagctgactagt	11777	-	transcription_regulat or	transcription_regulat	-	-
10789	SOX6	NM_033326.1	376	gaatgagcagcctttagatattg	11775	-	see also 9400 line	transcription_regulat	RNA polymerase II	-
10790	SOX8	NM_014887.2	1271	ctcgaagcctcagctactatagg	11839	-	transcription_regulat or	transcription_regulat	transcription factor	-
10791	SP140	NM_007237.2	575	tagaccacagattatccaccatag	11854	-	transcription_regulat or	transcription_regulat	transcription factor	-
10792	SPBPBP	NM_006692.1	858	tgagcattctactaaagctttac	11876	-	-	-	hematopoietic- associated factor	-
10793	SP11	NM_003120.1	280	acgccaaacgcacagctattacc	11885	-	transcription_regulat or	transcription_regulat	1A complex	-
10794	SP10	NM_152323.1	48	aagctggatgaacatttgaaaga	11891	-	-	-	Sterol regulatory element binding proteins	-
10795	SREBF1	NM_004176.2	2169	acgaacacctgctctacataag	11916	-	transcription_regulat or	transcription_regulat	-	-
10796	SRF	NM_003131.1	983	aagccagcgaagcactctgttca	11927	-	see also 2113 line	transcription_regulat	-	-
10797	ST18	NM_014882.1	712	ctcgtactactctctaaaggagac	11936	-	transcription_regulat or	transcription_regulat	-	-
10798	STAT1	NM_007915.2	721	caagctcagtcctggagatcttca	12016	-	transcription_regulat or, cell cycle, kinase related	transcription_regulat	STAT1/STAT2 complex	STAT1 deficiency(STAT1欠損症), atypical mycobacteriosis(AM症)
10799	STAT2	NM_005419.2	731	aagcaactctgagccgatttaact	12065	-	transcription_regulat or	transcription_regulat	-	-
10800	STAT3	NM_003150.2	2121	caagtcgtctgaacatacacaaa	12123	-	-	-	-	-
10801	STAT4	NM_003151.2	1160	aagagctcaactcttgatctaca	12158	-	see also 2128 line	transcription_regulat	translation regulator	-
10802	STAT5A	NM_003152.2	962	ctgcctcgcgcacactctgttca	12211	-	transcription_regulat or	translation regulator	-	-
10803	STAT5B	NM_012448.2	547	ctgcctcgcgcacactctgttca	12231	-	see also 5336 line	transcription_regulat	translation regulator	-
10804	STAT6	NM_003153.3	514	caagcaactctgagcactatctc	12258	-	transcription_regulat or	transcription_regulat	transcription factor	rheumatoid arthritis(関節リウマチ)
10805	SUPT4H1	NM_003168.1	121	ggtcttcctctgaagacatctag	12273	-	transcription_regulat or	transcription_regulat	-	-
10806	SUPT15H	NM_003169.2	521	ttgaagctccaatctagctaat	12288	-	see also 2141 line	transcription_regulat	-	-
10807	SUPT6H	NM_003170.2	2322	ctctgactgaagcctctcaatt	12346	-	see also 2142 line	transcription_regulat	translation regulator	-
10808	T	NM_003181.2	1020	aggtctcaacagcagctgctacc	12402	-	transcription_regulat or,	transcription_regulat	-	-
10809	TADA2L	NM_001488.2	540	aagcagctactctatgaaataa	12407	-	transcription_regulat or, cell cycle	transcription_regulat	-	-

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10810	TADA3L	NM_006354.2	1233	ctgacccaactgcacccaaga	12451	-	transcription_regulat or, cell cycle	-
10811	TAF10	NM_006284.2	595	cgcgaatgcctcaccacag	12458	-	transcription_regulat RNA polymerase II	-
10812	TAF13	NM_005645.2	272	ttgaagatactgctcttgatt	12469	-	transcription_regulat protein binding	-
10813	TAF1B	NM_005680.1	485	aaggaaactcgcgtttagaag	12479	-	transcription_regulat transcription co- activator	-
10814	TAF4	NM_003185.2	1912	aggtatacgcgaacttaattc	12533	-	transcription_regulat	-
10815	TAF5	NM_006951.2	853	atgcctcctcagctattatcgt	12573	-	see also 4887 line	-
10816	TAF8L	NM_014409.2	1023	ttgacgctgctccgcattcttg	12649	-	see also 5664 line	-
10817	TARDBP	NM_007375.2	618	atgtcaacagcatatgataga	12665	-	transcription factor	-
10818	TBR1	NM_006583.2	1197	ttggtgcgcgaagaattctttt	12695	-	transcription_regulat	-
10819	TBX1	NM_005992.1	578	ttgttcctctgcccgcctatctg	12703	-	transcription_regulat	-
10820	TBX19	NM_005149.1	244	aggaatgcgcgaaggaatttcc	12727	-	see also 3614 line	-
10821	TBX2	NM_005994.2	497	ctgcactatgctgcctataagtc	12741	-	transcription_regulat	-
10822	TBX20	NM_020417.1	648	ctgcatcaaatctgcccataaat	12752	-	transcription_regulat	-
10823	TBX21	NM_013351.1	644	ctgttgtgtccaaatttaaca	12759	-	transcription_regulat translation regulator	-
10824	TBX22	NM_016954.2	477	acgtctagtgcctctatcaaca	12773	-	see also 8980 line	-
10825	TBX3	NM_005996.2	640	aagtcagggaagcgaagtctcc	12815	-	transcription_regulat	ulnar mammary syndrome (尺骨乳頭症候群)
10826	TBX4	NM_018488.2	1615	ttgtccgcgaattctcttcaea	12852	-	transcription_regulat	-
10827	TBX5	NM_000192.3	990	ctgcgcacatgacacagatacaaa	12862	-	transcription_regulat	Holt-Oram syndrome (Holt Oram 症候群)
10828	TBX6	NM_004608.2	1196	ctgtctgacgcgtctctcatcca	12889	-	transcription_regulat	-
10829	TCEA1	NM_006756.1	163	acgcgcctcctgcacattgatttg	12898	-	transcription_regulat general RNA polymerase II	-
10830	TCEA2	NM_003195.4	1060	gttgctgcctgcgcacaagaatgc	12911	-	transcription_regulat	-
10831	TCEA1.1	NM_004780.1	501	ggggatcatatctgcgaatatt	12915	-	transcription_regulat	-
10832	TCF1	NM_000545.3	728	atccaatagaggaatgcatctcc	12917	-	transcription_regulat	atherosclerosis (粥状硬化症), diabetes mellitus (糖尿病), diabetes (糖尿病)
10833	TCF19	NM_007109.1	269	ggagctccacagctggaattgaat	12919	-	transcription_regulat factor-7-like-2-E	-
10834	TCF2	NM_000458.1	913	ccgctgctccacaaactctctgc	12928	-	see also 355 line	-
10835	TCF3	NM_003200.1	1191	cgctctccaggtgaatagaagaag	12954	-	transcription_regulat	MyoD/E47

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10858	TP53	NM_000546.2	384	ctgtccggcgcgactatttgaca	13447				hepatocellular carcinoma(肝癌), bladder transitional cell carcinoma(膀胱移行上皮癌), alveolar cell carcinoma(肺泡上皮癌), rhabdomyosarcoma(横紋肌軟骨肉腫), spindle sarcoma(紡錘形軟骨肉腫), cancer of the Fallopian tube(卵管癌), breast cancer(乳癌), soft tissue sarcoma(軟組織肉腫), leukemia(白血病), chondrosarcoma(軟骨肉腫), rheumatoid arthritis(関節リウマチ), laryngeal cancer(喉頭癌), Li-Fraumeni Syndrome(リー-フラウメニ症候群), colorectal cancer(大腸癌), non-hodgkin lymphoma(非ホジキンリンパ腫), nasopharyngeal cancer(鼻咽腔癌), hepatoblastoma(肝芽腫), endometrial cancer(子宮癌), Li-Fraumeni syndrome(リー-フラウメニ症候群), lung cancer(肺癌), medulloblastoma(髄芽腫), osteosarcoma(骨腫性骨肉腫), ovarian cancer(卵巣性卵巣癌), prostate cancer(前立腺癌), Ewing's sarcoma(ユイングス肉腫), carcinoma of the cervix(頸癌), CNS tumours(中枢神経腫瘍), melanoma(メラノーマ), dysplastic nevus syndrome(デイズナスチグマ-ニューノイド症候群), head and neck cancer(頭頸部癌), colorectal cancers(結腸直腸癌), Beckwith-Wiedemann syndrome(ベックウィズ-ウィーマン症候群), adamantinoma(アダムチノーマ), testicular cancer(睾丸癌), squamous cell carcinoma(扁平上皮細胞癌), nerve sheath carcinoma(神経鞘癌)
10859	TP73	NM_005427.1	755	ccgcgttgaggaagcaatctctct	13468	transcription_regulator, apoptosis, cell cycle, signal transduction			transcription factor
						see also 3789 line			
10860	TP73L	NM_003722.3	331	caagaagctgtccgcacaacaag	13479	transcription_regulator, apoptosis			Limb-mammary syndrome(Limb-mammary syndrome), ectodermal dysplasia(外胚葉性形成異常), split-hand and split-foot(裂手・裂足), adult syndrome(adult症候群), Hay-Wells syndrome(Hay-Wells症候群)
10861	TRIM16	NM_006470.2	546	ccgcacatgcgtgcacataaact	13515	or			
10862	TRIM22	NM_006074.2	359	agaggtccaaacagtcgaagctga	13517	or			
10863	TRIM28	NM_005762.2	894	atgtgtgaactcgtcgtctcttgc	13531	transcription_regulator			
10864	TRIM29	NM_012101.2	1381	atccatcccccacttcgaagaag	13558	or			
10865	TRPS1	NM_014112.1	2177	ggagccgcgagatgaatgagagga	13626	or			
10866	TSC22	NM_006022.2	347	tgtgtgaagctcgtcgtcatttg	13691	see also 3486 line			
						or			

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10894	ZNF147	NM_005082.2	158	gcgcctcgtgcctaaagacg	14824	transcription_regulat	transcription factor
10895	ZNF154	NM_003444.1	560	ctgaggaacaaatagacaa	14849	transcription_regulat	transcription factor
10896	ZNF155	NM_003445.2	612	caagactacccacattcatca	14857	transcription_regulat	DNA binding
10897	ZNF157	NM_003446.2	1574	ctgcgttttacaagaag	14875	transcription_regulat	transcription factor
10898	ZNF165	NM_003447.2	1436	agagagacagaccatctaga	14880	transcription_regulat	transcription factor
10899	ZNF167	NM_018851.1	859	gtggagcttcgcaatgaact	14700	transcription_regulat	transcription factor
10900	ZNF174	NM_003450.1	1508	gagcaacgtttgcaacatttg	14714	transcription_regulat	transcription factor
10901	ZNF175	NM_007147.2	1346	gtgatctgcacagctacaa	14733	transcription_regulat	transcription factor
10902	ZNF187	NM_152736.2	425	cagaacgtgacagagattatc	14747	transcription_regulat	transcription factor
10903	ZNF189	NM_003452.2	831	tgttcaacttattttatttg	14761	transcription_regulat	transcription factor
10904	ZNF19	NM_006981.2	1019	acgagttgtccgagtttttat	14793	transcription_regulat	transcription factor
10905	ZNF192	NM_006298.1	857	atgctgtctccattatcgaga	14807	transcription_regulat	transcription factor
10906	ZNF193	NM_006299.2	548	gagctcgataaacacacatga	14808	transcription_regulat	transcription factor
10907	ZNF197	NM_006991.2	1231	gcgttcagccttctaagcatt	14839	transcription_regulat	transcription factor
10908	ZNF202	NM_003455.1	1149	tttgcaccttcggaacataca	14870	transcription_regulat	transcription factor
10909	ZNF207	NM_003457.1	387	tggtgcctcctacaaagcata	14890	transcription_regulat	transcription factor
10910	ZNF211	NM_006385.2	961	aagcatgtctcgagaagtgtaac	14928	transcription_regulat	transcription factor
10911	ZNF213	NM_004220.1	977	ggagagcaatccctattttct	14831	transcription_regulat	transcription factor
10912	ZNF215	NM_013250.1	2005	cggaactctctctatttcagaa	14869	transcription_regulat	transcription factor
10913	ZNF217	NM_006526.2	394	aggaacacctctttttctatcc	14877	transcription_regulat	transcription factor
10914	ZNF219	NM_016423.1	2020	cagtccgctgcctcaagatcaa	15051	transcription_regulat	transcription factor
10915	ZNF232	NM_014519.2	1073	cggagagacatcccaagatgga	15056	transcription_regulat	transcription factor
10916	ZNF236	NM_007345.1	3387	agggagagcttcctgaactcaat	15134	transcription_regulat	transcription factor

Backwith-Wiedemann syndrome (ベックワイス・
ウィーデマン症候群)
breast cancer (乳癌)
atherosclerosis (粥状硬化症)
diabetes (糖尿病)

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10917	ZNF24	NM_008965.1	1116	caagaatcaggactattattatca	15172	-	transcription_regulat	-	zinc binding	-
10918	ZNF256	NM_005773.2	798	ctctctcacacagaagaatca	15180	-	transcription_regulat	-	transcription factor	-
10919	ZNF263	NM_005741.3	1238	tggagagctctctctctgctgc	15190	-	see also 3962 line	-	-	-
10920	ZNF265	NM_005455.2	199	aggcctattttagtctatgaat	15215	-	transcription_regulat	-	transcription factor	-
10921	ZNF274	NM_016324.2	537	cagatccagccctatctctga	15238	-	transcription_regulat	-	-	-
10922	ZNF277	NM_021994.1	1299	gttgagctaacctggagtattatt	15285	-	transcription_regulat	-	transcription factor	-
10923	ZNF287	NM_020853.1	1432	caaggcaaccttcaatcatgct	15317	-	transcription_regulat	-	transcription factor	-
10924	ZNF3	NM_032924.2	1574	gagttacgccgagttaatatc	15334	-	transcription_regulat	-	DNA binding	-
10925	ZNF3	NM_017715.1	390	aggatctactatgagaatttca	15337	-	transcription_regulat	-	-	-
10926	ZNF305	NM_014724.1	1333	tcggctctctcaactactcagc	15366	-	transcription_regulat	-	transcription factor	-
10927	ZNF306	NM_024493.1	963	aggagcatggagaagatctgctc	15373	-	transcription_regulat	-	-	-
10928	ZNF31	NM_145238.2	1372	ctgttcagagctctatttgcagg	15385	-	transcription_regulat	-	DNA binding	-
10929	ZNF323	NM_030899.2	1331	aagcgcgaacctcttaagaacca	15404	-	transcription_regulat	-	-	-
10930	ZNF33A	NM_006974.1	1347	ccctgagcttcgcaccttaag	15410	-	transcription_regulat	-	transcription factor	-
10931	ZNF35	NM_003420.2	311	gtgcaactcggagaactcaagtt	15413	-	transcription_regulat	-	transcription factor	small cell lung cancer(肺癌)
10932	ZNF38	NM_145914.2	728	aggtcggagattgcagattgaat	15432	-	transcription_regulat	-	zinc binding	-
10933	ZNF394	NM_032164.2	1395	aagcctacacactctctgaaatg	15453	-	transcription_regulat	-	-	-
10934	ZNF396	NM_145756.1	676	caagtcttaagaccacatgatga	15470	-	transcription_regulat	-	DNA binding	-
10935	ZNF397	NM_032347.1	175	caggatctctcggacaagaact	15495	-	transcription_regulat	-	-	-
10936	ZNF41	NM_007130.1	2424	ctggccgcatcaactctcabaaca	15523	-	transcription_regulat	-	-	-
10937	ZNF42	NM_003422.2	583	gagctctcgcctcgaatgaatag	15526	-	transcription_regulat	-	transcription factor	-
10938	ZNF434	NM_017810.2	1756	tgacgaagttattatttttc	15544	-	transcription_regulat	-	-	-
10939	ZNF435	NM_025231.1	501	caagaagaagcggacacatctcgtg	15550	-	transcription_regulat	-	transcription factor	-

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10940	ZNF45	NM_003425.2	1149	aaactctctgaagctcaagc	15577	-	transcription_regulat	-	transcription factor	-
10941	ZNF494	NM_152677.1	1132	gaagataatccctaaagaagt	15593	-	transcription_regulat	-	-	-
10942	ZNF495	NM_024303.1	1590	gaagcctcagctgcgaagt	15624	-	transcription_regulat	-	-	-
10943	ZNF496	NM_032752.1	2143	aaagctctcagcgaactatga	15631	-	transcription_regulat	-	-	-
10944	ZNF70	NM_021910.2	764	caagctatcgaatataccaca	15635	-	transcription_regulat	-	-	-
10945	ZNF75	NM_007131.1	1196	caagctatactctgaacttga	15645	-	transcription_regulat	-	zinc binding	-
10946	ZNF80	NM_007138.1	617	ggagcaactaaagaacacttgg	15649	-	transcription_regulat	-	transcription factor	-
10947	ZNF83	NM_018900.2	1928	cagcgcaactcatatctgtac	15668	-	transcription_regulat	-	transcription factor	-
10948	ZNF9	NM_003418.1	468	tggagaattcggacaactcaaa	15676	-	transcription_regulat	-	transcription factor	-
10949	ZNF1A3	NM_012481.3	1320	gaagttcccgctctcgaact	15713	-	see also 2310 line	-	-	-
10950	ZNF1A4	NM_022465.2	1752	tggacaactgaattcactatc	15727	-	transcription_regulat	-	-	-
10951	ZNRD1	NM_014596.4	190	caagtcgaacttgattctgttc	15728	-	transcription_regulat	-	-	-
10952	BRCA1	NM_007294.1	4329	gaagcagataatcgaactaacc	16042	-	see also 5077 line	-	-	-
10953	DBP1	NM_001923.2	1346	ctggctcttaacctactatgga	16096	-	see also 1223 line	-	-	-
10954	DBP2	NM_000107.1	467	ctgaatcttaaccgagatataca	16136	-	-	damaged DNA binding	-	-
10955	DMC1	NM_007068.2	1146	atgaagcaacctcgaataact	16193	-	phosphatase, cell cycle	damaged DNA binding	-	Alzheimer disease(アルツハイマー病)
10956	ERC01	NM_001983.1	466	ggcaactcgaactgaagttcg	16196	-	-	endonuclease	-	-
10957	ERC03	NM_000122.1	1920	caagtcaggagcaactcgttga	16250	-	transcription_regulat	RNA polymerase II	-	Ichthyosiform erythroderma(性魚鱗様皮膚症), xeroderma pigmentosum(色素性乾皮症)
10958	FANCG	NM_004629.1	1405	ctgctagtgaagccttgaaagt	16276	-	see also 3144 line	transcription factor	-	-
10959	FEN1	NM_004111.4	610	agaccccttatgtcttcttgag	16296	-	-	endonuclease	-	-
10960	JTV1	NM_006303.2	398	ggatgatgaccagcaactaac	16306	-	see also 4395 line	-	-	-
10961	MPG	NM_002434.1	960	cggaaacccctccgctctatgt	16333	-	-	alkylbase DNA N-glycosylase	-	-
10962	MSH2	NM_000251.1	784	aggactctaaacgctgttgaaa	16347	-	see also 183 line	-	-	-
10963	MSH3	NM_002439.1	2157	ttgacgagatccgaagcatttg	16496	-	-	damaged DNA binding	-	ataxia telangiectasia(毛細血管拡張性運動失調症), endometrial cancer(子宮癌)
10964	MSH4	NM_002440.2	1085	tgaagcactcctttcctatcat	16568	-	-	damaged DNA binding	-	-
10965	MSH6	NM_000179.1	3186	ggagcagctctcctaacattg	16780	-	-	-	-	-
10966	NABP2	NM_018177.2	313	ctgaactcgaatattctattt	16821	-	see also 153 line	-	-	-
10967	NBS1	NM_002485.3	384	aaagcggagagagattatcttt	16970	-	see also 1591 line	-	-	-

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10868	O6G1	NM_002542.4	1436	atgctactatcgcgaactgaatgctg	17028	-	-	lung squamous cell carcinoma(肺扁平上皮癌)、renal cell carcinoma(腎細胞癌)、non-small-cell lung cancer(非小細胞肺癌)
10869	PNKP	NM_007254.2	308	tggagatcaaccctcaactacc	17050	-	kinase, related, phosphatase	-
10870	POLH	NM_005802.1	1138	atggcctcggagtgatgacatgca	17076	-	see also 4548 line	-
10871	POLG	NM_005950.3	4851	atggcctcgaactgaatgactcatt	17254	-	see also 4827 line	-
10872	RAD1	NM_002853.2	1048	agatctctctggcagcgtaac	17396	-	see also 1883 line	-
10873	RAD18	NM_020165.2	1002	aagctcagatgctctcttgaaac	17436	-	damaged DNA binding	-
10874	RAD51	NM_002875.2	885	atgtgtgatactatgctatgac	17470	-	see also 1917 line	-
10875	RAD51C	NM_002876.2	377	gggttgatgtcccttaagtga	17486	-	phosphatase	-
10876	RAD51L1	NM_002877.3	938	tgcctcctcctgagaaatactctg	17537	-	phosphatase, transcription_regulat or	leiomyoma(平滑筋腫)、uterine leiomyoma(子宮平滑筋腫)
10877	RAD51L3	NM_002878.2	992	atgtgtgacacacactaactcg	17548	-	-	-
10878	REV1L	NM_016316.1	2972	caatgtgcagtcagcagctbaacc	17630	-	see also 8805 line	-
10879	TIAF1	NM_004740.2	184	cggcttcgaagctctctaagatga	17682	-	apoptosis, kinase, related	-
10880	XPA	NM_000380.2	587	atggagctgatacaactact	17733	-	-	-
10881	XPC	NM_004828.2	590	ggcgcctgaacgtttcattaaa	17758	-	-	-
10882	XRCO1	NM_006297.1	1834	atgctgtaccgaggtctggtgtg	17804	-	single-stranded DNA binding	xeroderma pigmentosum(色素性乾皮症)、melanoma(メラノーマ)
10883	XRCO2	NM_005431.1	346	tgtgtatgctcggctgctgaca	17810	-	damaged DNA binding	head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)
10884	XRCO3	NM_005432.2	503	ggagcagcctcttcactctgc	17837	-	phosphatase, transcription_regulat or	-
10885	IASF1A	NM_014034.1	462	agcgtgaactctttctctatta	17846	-	see also 5464 line	-
10886	BAF53A	NM_004301.2	1295	aagatgcctgtgaattgattg	17894	-	signal transduction	-
10887	CBX4	NM_003655.1	264	ggagctgctccccaataataac	17901	-	see also 2478 line	-
10888	CBX5	NM_012117.1	644	ggagctactaaatgctgctatc	17923	-	lamini/chromatin binding	-
10889	CBX7	NM_175709.1	536	gcggctctcgcgaagatcttc	17929	-	transcription_regulat or	-
10890	CBX8	NM_020849.1	191	agggatgctgcagaatcacac	17931	-	transcription_regulat or	-
10891	GOYL	NM_004824.2	1580	tgcctgcttacccttatgttc	17982	-	chromatin binding	-
10892	GOYL2	NM_152342.1	351	agccctcctgcttgaactctgt	17971	-	-	-
10893	GENPA	NM_001809.2	310	agggcagccctctctgaaag	17987	-	chromatin binding	-
10894	CEVPB	NM_001810.4	1346	agggcagggatgactgctgagt	17995	-	satellite DNA binding	-

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10995	CHAF1A	NM_005483.1	1430	cgagctcagacacgtttccatcc	18023	-	cell cycle apoptosis, cell cycle, transcription, regulat or,	histone-specific chaperone	-
10996	CHAF1B	NM_005441.1	841	ctgtccagctcctctttacatga	18054	-	-	signal transducer	-
10997	CHD1	NM_001701.1	2603	ggcggatcttgatatactctgc	18153	-	see also 832 line	-	-
10998	CHD2	NM_001721.1	5733	ggggacccggcagcatatggagc	18344	-	transcription, regulat or	chromatin binding	Alzheimer disease (アルツハイマー病)
10999	CHD5	NM_015557.1	1697	ctgtacacacagctgctgctatcg	18356	-	transcription, regulat or	-	-
11000	CHD6	NM_032221.3	6386	ggagctggctccaccactctgc	18498	-	see also 8120 line	-	-
11001	EZH1	NM_001991.2	192	atggactctgcacacttaacag	18525	-	see also 1278 line	-	-
11002	HTATIP	NM_006388.2	1161	ttgttgacgttaagacaaagagt	18575	-	signal transduction	-	-
11003	ING1L	NM_001564.1	352	ggagcacttaataatgctcaag	18590	-	transcription, regulat or	-	-
11004	MGC10561	NM_032847.2	143	gcagctgctctccacacataac	18606	-	-	chromatin binding	myeloperoxidase deficiency (ミエロペルオキシ ダーゼ欠損症), Alzheimer disease (アルツハイ マー病)
11005	MORF4L1	NM_006791.1	816	ttggataccagctcactctataaa	18607	-	-	Smad3/Sp-1 heterodimer	-
11006	MPO	NM_000250.1	574	ctgtggcagacacacatcaatgt	18608	-	apoptosis	-	-
11007	MYST1L	NM_032188.1	933	gactcccgagagagacaaagt	18637	-	-	-	-
11008	NG2A6	NM_014071.2	598	caagcagctgctcctctccatcaaa	18641	-	see also 5477 line	-	-
11009	NSBP1	NM_020763.1	894	ggagcagcaacagatgtgttga	18775	-	transcription, regulat or	-	-
11010	PBI	NM_018165.2	4841	tcgagagcagctcctctcttctgt	18882	-	see also 7297 line	-	-
11011	RBP1L1	NM_016374.4	1428	aagatagagctgacacctctataac	18903	-	see also 6844 line	-	-
11012	SMARCC1	NM_003074.2	1325	aggagctgctgctgctctgctatg	19028	-	see also 2062 line	-	-
11013	SMARCC2	NM_003075.2	601	gggtacacacacatcatgagagag	19080	-	see also 2063 line	-	-
11014	SMARCE1	NM_003078.3	1260	aagagcaacacatgctgtatcaacct	19109	-	transcription, regulat or	-	-
11015	SUV39H1	NM_003173.1	1222	aagagcagctgctcctctcttctgt	19130	-	-	-	-
11016	SUV39H2	NM_024870.3	1007	cagctgatacaggcaactgtctct	19154	-	see also 8695 line	-	-
11017	BRO42	NM_000958.1	7223	gtgtacaccttggcacaactaag	19363	-	see also 34 line	-	-
11018	ERCC5	NM_00123.1	2729	ggagatggcgggaagtaagtaa	19529	-	see also 88 line	-	-
11019	HNRPDL	NM_005463.2	1253	cttgatggcgcggctactctct	19570	-	see also 3802 line	-	-
11020	IGHMBP2	NM_002180.1	2311	caagctcgcggtgctccaccaaatag	19605	-	transcription, regulat or	antigen binding	-
11021	KHORS1	NM_006559.1	1248	aagctacagagctatctacacg	19623	-	cell cycle, signal transduction	-	-
11022	PIR1	NM_006478.2	32	tggtggcctctgagacacataag	19653	-	-	-	-
11023	POLG2	NM_007215.1	1210	tggttaccctctatgagcttgc	19699	-	see also 5024 line	-	-
11024	RAD23B	NM_002974.2	908	caatgctgctctgagagatctg	19724	-	see also 1914 line	-	-
11025	RBMS1	NM_002997.2	1212	tggctgctgagcagctctgata	19758	-	see also 1938 line	-	-

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11026	RPA1	NM_002345.2	1160	gcagccatttgcctatcaaga	19795	-	see also 1989 line	-	-
11027	RPA2	NM_002346.3	1029	gcgaatgagggacaaactatt	19831	-	see also 1990 line	-	-
11028	RPA3	NM_002347.2	1525	tggagatttgcacaactggtga	19842	-	-	single-stranded DNA binding	-
11029	SBP1	NM_003143.1	70	agctttgagagccctgattaca	19847	-	-	single-stranded DNA binding	-
11030	SBP2	NM_012448.2	272	aggtatgcctctgcgtatgga	19855	-	see also 5334 line	-	-
11031	SBP3	NM_018070.2	1025	caaggacaacactctacacaatga	19879	-	transcription_regulat or	-	-
11032	SSBP4	NM_032927.1	292	tggcgctgacgtttatgattac	19882	-	see also 9263 line	-	-
11033	WBP11	NM_018312.2	1007	aagtgacggagatgaatttgc	19926	-	-	-	-
11034	CGBBP1	NM_003863.2	357	atggagcagatttggtaacagc	19930	-	-	-	-
11035	G2P1	NM_001469.2	2057	aagcttcgtctcacatcacagaag	19941	-	-	Ku70/80 antigen complex	-
11036	IFT16	NM_005531.1	2346	ggagctgtgaattctatgctaca	19978	-	transcription_regulat or	transcriptional repressor	-
11037	MRE11A	NM_005590.2	690	tgcgctatatagttttaggattcc	19993	-	-	-	-
11038	MTERF	NM_006980.2	825	aagcggatggaagctaacattga	20067	-	transcription_regulat or	transcription	-
11039	NP220	NM_014497.2	1833	cggttcgagagcccaatgcatta	20140	-	see also 5721 line	transcription factor	-
11040	SAPB	NM_002867.2	1728	ggagccgaacgactctatgaat	20293	-	transcription_regulat or	-	-
11041	XRCG5	NM_021141.2	1198	atgttgaacattatgtaattgc	20325	-	see also 8105 line	-	-
11042	MBD2	NM_003927.3	902	ctgggaagatctctctcaatga	20354	-	see also 2688 line	-	-
11043	MBD4	NM_003925.1	1548	aagcttctcagctctatatt	20394	-	-	satellite DNA binding	-
11044	MLH3	NM_014381.1	3516	tggagatgcgttcagctttgt	20490	-	-	-	-
11045	ORC2L	NM_006190.3	1344	atggtctcttcgcagttact	20543	-	see also 4277 line	-	-
11046	ORC3L	NM_012381.2	165	aagcttgcgttcgaaactatca	20575	-	-	-	-
11047	ORC4L	NM_002552.2	251	caagtcacctatgaactcatt	20640	-	see also 1642 line	-	-
11048	ORC5L	NM_002553.2	245	atgtaacacaacgcttttgaaa	20680	-	see also 1646 line	-	-
11049	TERF2	NM_005652.2	438	cgatgtctctgcggttggaaga	20722	-	see also 3921 line	-	-
11050	TERT	NM_003219.1	651	gcgaacggcctcggaacatgac	20742	-	-	telomeric template RNA reverse transcriptase	leukemia(白血病)
11051	KIF2C	NM_006845.2	1942	cgagatgcctcagcttaacgaac	20797	-	-	microtubule motor	-
11052	ZW10	NM_004724.2	1457	ttsgccacatgcctatcattgga	20842	-	cell cycle	-	-

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11080	BAZ29	NM_013450.1	4263	gtgcactctctctctctgaaga	22455	-	transcription, regulat	-	-
11081	BBX	NM_020235.2	1063	tgcagacatctctctctctgaag	22523	-	or	-	-
11082	BDP1	NM_018239.1	5592	ctctgcacacatctctctctgaag	22667	-	see also 7810 line	-	-
11083	BHC80	NM_016821.2	1762	actctctctctctctctctctgaag	22732	-	see also 6953 line	-	-
11084	BLM	NM_000057.1	1996	gaagctctctctctctctctctgaag	22780	-	see also 30 line	-	-
11085	BOG	NM_033254.2	856	caagctctctctctctctctctgaag	22869	-	see also 9387 line	-	-
11086	BRD1	NM_014577.1	2391	tggtaacacgctctctctctgaag	22932	-	transcription, regulat	unknown	Alzheimer disease(アルツハイマー病)
11087	BRP1	NM_032043.1	1790	tgctgctctctctctctctctgaag	23006	-	see also 9008 line	-	-
11088	BRPF1	NM_004034.1	937	ggctacagctctctctctctgaag	23082	-	see also 3148 line	-	-
11089	B589	NM_006624.1	837	ctctctctctctctctctctgaag	23123	-	see also 4684 line	-	-
11090	C11orf13	NM_003475.2	350	cgggaacgctctctctctgaag	23145	-	signal,transduction	-	-
11091	C14orf105	NM_018353.2	1673	tgtctagcgtctctctctgaag	23182	-	transcription, regulat	DNA binding	-
11092	C14orf148	NM_152477.2	1629	tgtctatgatacgaacactga	23274	-	see also 9869 line	-	-
11093	C20orf100	NM_032883.1	697	agagatcgggaagctctctgaag	23313	-	transcription, regulat	-	-
11094	C20orf104	NM_016436.3	230	aagcgttggaacactctctga	23323	-	transcription, regulat	-	Alzheimer disease(アルツハイマー病)
11095	C21orf127	NM_013240.2	288	ggagacacacgctctctgaag	23398	-	-	-	-
11096	C21orf66	NM_013329.2	1166	atgctctctctctctctctgaag	23418	-	see also 5401 line	-	-
11097	CACNA1A	NM_000688.2	5907	cgctctctctctctctctgaag	23587	-	see also 40 line	-	-
11098	GARE-1	NM_018237.1	957	cagctctctctctctctctgaag	23607	-	see also 7350 line	-	-
11099	CBF2	NM_005760.1	156	agagacacacgctctctgaag	23679	-	see also 4017 line	-	-
11100	CCN1	NM_020307.1	744	cgctctctctctctctctgaag	23768	-	see also 7825 line	-	-
11101	CD5L	NM_001253.2	1941	tgaacgcctctctctgaag	23839	-	transcription, regulat	-	Alzheimer disease(アルツハイマー病)
11102	CEBPG	NM_001806.2	324	gggtgaacgctctctctgaag	23854	-	transcription, regulat	translation	-
11103	CENPF	NM_001812.1	2548	agagctctctctctctctgaag	23936	-	or	regulator	-
11104	CEN1A	NM_008689.1	1277	tggagcgcctctctctgaag	23975	-	see also 4808 line	DNA binding	-
11105	CEN2A	NM_018404.1	244	ctctgcgcctctctctgaag	23978	-	see also 7449 line	-	-
11106	CEN1B	NM_014716.1	233	cgctctctctctctctctgaag	23997	-	see also 5909 line	-	-
11107	CEN1B2	NM_012287.3	397	ctctctctctctctctctgaag	24025	-	-	GTPase activator	-
11108	CEN1B5	NM_030649.1	976	ggagcgcctctctctctgaag	24087	-	-	-	-
11109	CEN1D	NM_015230.2	4348	agagacacacgctctctgaag	24215	-	-	signal,transduction	-
11110	CENTD2	NM_015242.2	1112	cgctctctctctctctctgaag	24265	-	see also 6286 line	-	Alzheimer disease(アルツハイマー病)
11111	CEG1	NM_014701.1	695	atgaagctctctctctgaag	24292	-	-	-	-
11112	CEG2	NM_014914.1	839	cgctctctctctctctctgaag	24302	-	-	-	-

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11113	CHC1	NM_031946.3	261	ccgctctcaacgaactaaag	24319	-	signal transduction	-	-
11114	CHC1	NM_001269.2	898	aagcctgctgcctgattttg	24340	-	see also 831 line	-	-
11115	CHD1L	NM_024568.1	1818	ggcgcgtctcctcgaataaag	24360	-	-	-	-
11116	CHRA3	NM_017444.3	357	atgcctggccctctctctctca	24385	-	-	-	-
11117	CHTF18	NM_022092.1	62	gagcgcctggagatgattccc	24398	-	-	-	-
11118	CIC	NM_015125.2	2220	tggtgtattctggacagaagctgg	24411	-	transcription_regulat or	-	-
11119	CP29	NM_033092.1	338	ggagctctgcagcttcaatgac	24422	-	transcription_regulat or	DNA binding	-
11120	CNTN1	NM_001843.2	1918	cagatctctcgaactatattg	24479	-	see also 1191 line	-	-
11121	COFEB	NM_001300.3	842	ggagcgaacgctgcaccttaac	24544	-	transcription_regulat or	translation regulator	prostate cancer(前立腺癌)
11122	CREB3	NM_006368.4	635	cagcctcgttgaacattctcagc	24552	-	transcription_regulat or	-	-
11123	CREB3L3	NM_032807.1	1339	cgcggaaactgacc-aattcgag	24568	-	transcription_regulat or	-	-
11124	CREB3L4	NM_130898.2	1103	cagctctcaagcactaaagtctca	24573	-	transcription_regulat or	-	-
11125	CREB5	NM_004504.1	361	cggatatctcgtcactgaatgac	24588	-	see also 3409 line	-	-
11126	CREBL1	NM_004381.3	1724	ctctggcgaacactgcaactat	24613	-	see also 2839 line	-	-
11127	CRY1	NM_004075.2	1015	tggacaacgcctctcaacttata	24633	-	see also 2746 line	-	-
11128	CSEN	NM_013434.3	416	atggacagagacacttcaaacct	24677	-	transcription_regulat or,	transcription co- repressor	-
11129	D1S155E	NM_007158.2	497	cgcctgtaacagctggttttttta	24679	-	see also 4981 line	-	-
11130	DC8	NM_015071.2	150	cgcctctgagacgaatactctctca	24737	-	-	-	-
11131	DOEF2	NM_003687.1	477	tggcctcgggtggtctttttcaaa	24751	-	-	-	-
11132	DDX3X	NM_001356.2	1975	ggagctccgcacactcttgatgt	24892	-	see also 901 line	-	-
11133	DDX3T	NM_004660.2	1143	cagatagctcgtatgtatgtca	24918	-	see also 3179 line	-	-
11134	DDX48	NM_014740.1	1383	ggatatcagcagctactattcttc	24965	-	translation initiation factor	-	-
11135	DEAF1	NM_021008.2	1304	cgcctacagctgcggaaactcagc	24973	-	apoptosis, transcription_regulat or	DNA binding	-
11136	DEDD	NM_004216.2	807	ggcgcactttgagcgttttaaac	24991	-	transcription_regulat or	-	-
11137	DEDD2	NM_133328.2	805	ccctgtgttttgatcataagtttc	24995	-	apoptosis, transcription_regulat or	-	-
11138	DEK	NM_003472.2	811	aagcttaaacgaacaaagctcc	25010	-	transcription_regulat or,	specific RNA polymerase II	-
11139	DHX9	NM_001357.2	3444	cagctggacccctgaatgaagcc	25108	-	signal transduction transcription factor	leukemia(白血病)	-
11140	DKFZ434f					-	see also 502 line	-	-
11140	1930	NM_032255.1	1450	cagctccatctcgtcatcagctgg	25122	-	-	-	-

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11141	DKFZP564 DKFZP564	NK_031435.1	756	ttgacaccatataaagctatgca	25142	-	see also 9024 line	
11142	DKFZP564	NK_015534.3	1205	aggatagcagatacccaactca	25179	-	see also 6456 line transcription_regulat or	transcriptional repressor
11143	DNAPI	NK_019100.3	575	ccgaagacgaggaagcagctct	25241	-	see also 8348 line	transcriptional repressor
11144	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11145	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11146	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11147	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11148	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11149	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11150	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11151	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11152	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11153	DNAJ01	NK_022385.2	1709	cgatcctcagctagcaagctgc	25292	-	see also 8348 line	transcriptional repressor
11154	DPF1	NK_004647.1	771	aggacacccctcgtgttcaact	25569	-	see also 9213 line	apoptosis
11155	DRI	NK_001938.1	663	tggtgaactcctcagctgaattc	25590	-	see also 1236 line	transcription_regulat or
11156	DRAP1	NK_006442.2	340	cgagctcctcctcctcctctcc	25601	-	see also 1236 line	transcription_regulat or
11157	DRF1	NK_025104.2	478	ggcgcagcgcagcagcagcagc	25603	-	see also 1236 line	transcription_regulat or
11158	DRIL2	NK_006465.1	563	gtgacacacacacacacacacac	25627	-	see also 1236 line	transcription_regulat or
11159	DRIM	NK_153757.1	340	aaagctcctcagctagctgaagc	25638	-	see also 8555 line	transcription_regulat or
11160	EBF	NK_024007.2	1146	tggtggtgctcagctgaattc	25686	-	see also 8555 line	transcription_regulat or
11161	EBF2	NK_022659.1	644	aaagctcctcagctgaattc	25703	-	see also 8555 line	transcription_regulat or
11162	ECE2	NK_014693.1	1676	atgttctcagctgaattc	25738	-	see also 8555 line	transcription_regulat or
11163	EDF1	NK_003792.2	339	aggctgctcagctgaattc	25748	-	see also 8555 line	transcription_regulat or
11164	EGF2	NK_000399.2	656	cgtcctacacagaagcgaataca	25757	-	see also 8555 line	transcription_regulat or
11165	EIF4A1	NK_001416.1	483	tggtcctcgtgttctgctctca	25763	-	see also 8555 line	transcription_regulat or
11166	EIF4A2	NK_001967.2	20	cgtcctcgtgttctgctctca	25768	-	see also 8555 line	transcription_regulat or
11167	ELYS	NK_015446.1	4504	tggtcctcgtgttctgctctca	25888	-	see also 8555 line	transcription_regulat or
11168	ENDOG	NK_004455.1	786	cgtcctcgtgttctgctctca	25940	-	see also 8555 line	transcription_regulat or
11169	EP400	NK_013409.2	5850	cagcctcagctgaattc	26016	-	see also 8555 line	transcription_regulat or
11170	ERCC4	NK_005261.1	2056	tggtgctcgtgttctgctctca	26128	-	see also 8555 line	transcription_regulat or

hereditary motor and sensory neuropathy (遠位性運動性ニューロパシー)および遠位感覚性ニューロパシー (Charcot-Marie-Tooth neuropathy (シャルコ・マリー・トゥー症候群))

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11171	ERN1	NM_001433.1	1104	cgacgaggaagtcgaattcttc	26174	-	see also 1002 line
11172	EV1	NM_005241.1	2105	aagaggaacgctgcatcaaga	26231	-	see also 3673 line
11173	EX1	NM_003866.3	2093	cgatctatgcgaatcaatt	26333	-	see also 2505 line
11174	EZH2	NM_004546.3	1407	aagcaaatctctggctcaaca	26386	-	see also 2980 line
11175	FALZ	NM_004458.5	5919	tggctctatgcattcgact	26534	-	transcription_regulat or
11176	FBXL1	NM_012308.1	3264	atgcacgctctgctcataatt	26667	-	transcription_regulat or
11177	FORH3	NM_052938.2	463	tgtatatacagctgaagattct	26679	-	-
11178	FLJ10876	NM_018256.2	556	caagctctgaactgaactaag	26725	-	see also 7346 line
11179	FLJ12178	NM_025134.2	1724	ctgttaactctgaactcataga	26786	-	-
11180	FLJ12800	NM_022803.2	1403	taagctgctcctgagctgagg	26936	-	-
11181	FLJ13111	NM_025082.1	785	tgtctctcccaacgtctcatct	26945	-	transcription_regulat or
11182	FLJ14260	NM_025027.2	1212	gtctccttaaggacaaacttgg	26986	-	-
11183	FLJ14281	NM_024920.3	2317	ctgtatatacacaactataao	27007	-	-
11184	FLJ120125	NM_017678.1	326	agactctatctggtatctacgg	27019	-	see also 7107 line
11185	FLJ20203	NM_032292.3	4082	tatctctctatctggtatctct	27098	-	-
11186	FLJ1439	NM_025137.2	2893	agctctcttgaagctgcttct	27173	-	-
11187	FLJ23017	NM_022840.2	1311	aagagctgaagcctactctt	27304	-	see also 8402 line
11188	FLJ23119	NM_024852.2	2384	ggatctagctctctgctgata	27359	-	kinase related
11189	FLJ23436	NM_024871.2	943	agggctctctgcttaactctgc	27388	-	transcription_regulat or
11190	FLJ36070	NM_162574.1	1206	agggctgcaatgtctctctaac	27391	-	see also 10271 line
11191	FLJ38964	NM_173527.1	515	ggagcctctatctggttaag	27396	-	see also 10080 line
11192	FOS	NM_005252.1	223	cctggagatagcctctctctac	27401	-	transcription_regulat or
11193	FOSB	NM_006732.1	1477	tgtttaacctctgtaacctct	27418	-	transcription_regulat binding
11194	FUS	NM_004960.1	651	tgcctcttctatcaatacaagcc	27423	-	transcription_regulat binding
11195	GASCI	NM_015061.1	2989	tggcgcctatgcaaaactctagg	27491	-	transcription_regulat or
11196	GCM1	NM_003643.1	623	gaagcagcagcagcctctatat	27510	-	transcription_regulat or
11197	GCM2	NM_004752.1	588	aagcgcctcaagaagacaatagg	27540	-	transcription_regulat or
11198	GF1	NM_005263.1	563	caagctctgagaagctcaagctgc	27573	-	transcription_regulat or, cell cycle
11199	GIOT-1	NM_153257.1	1823	aagcgttttaactagcttaca	27587	-	transcription_regulat or
11200	GITI	NM_014030.1	719	tggcgcgaagcgcgtatcaaga	27594	-	signal transduction , gpr

soft tissue sarcoma(軟部組織肉腫), leukemia(白血病), myoid liposarcoma(肌源性脂肪肉瘤), osteosarcoma(骨質性骨肉瘤)

図46(続き)

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図46 (続き)

11201	GT2	NM_014776.2	434	ctccggagatcagcagatctga	27616	-	signal_transduction gpcr	-
11202	GL1	NM_005269.1	997	ggctccgaagctactactcaag	27659	-	transcription_regulat or,	RNA polymerase II transcription factor
11203	GL4	NM_138465.2	615	cgcgaagatgttcaactgaact	27692	-	transcription_regulat or	molecular_function unknown
11204	GMEB1	NM_006582.2	1644	cgcgcctaacctccgaactcaag	27712	-	transcription_regulat or	RNA polymerase II transcription factor
11205	GMEB2	NM_012384.2	610	gggcgcgaactgacgaagaatac	27715	-	transcription_regulat or	Transcription initiation factor
11206	GT2F1	NM_002096.1	190	agccctaccagccgaagatctca	27730	-	transcription_regulat or, kinase related	Transcription initiation factor IIF, complex
11207	GT2F2	NM_004128.1	173	gtgcctatcaagctcctaact	27741	-	transcription_regulat or	Transcription initiation factor IIF, complex
11208	GT3A	NM_002097.1	743	aagcgcctacgaagctctgatg	27769	-	transcription_regulat or	RNA polymerase III transcription factor
11209	GT3G1	NM_001520.1	344	aggatgtctaccocctcatatg	27796	-	transcription_regulat or	-
11210	H1F0	NM_005318.2	557	ctgcctcagatcagatctgtcc	27880	-	-	DNA binding
11211	H1FOO	NM_153833.1	268	tgacctctccctcctaataag	27883	-	-	-
11212	H1FX	NM_006026.2	495	cgcctttctcccactctcaatg	27889	-	-	DNA binding
11213	H2AFY	NM_004893.2	1175	gcattctctgtctctcaactg	27903	-	-	-
11214	H2AFZ	NM_018649.1	1051	catggagcttcagacaactgtga	27924	-	-	DNA binding
11215	H3F3B	NM_005324.3	439	ggctctgttcctgaagctacacc	27928	-	-	DNA binding
11216	HBP1	NM_012257.2	1005	ggctctgttcctgaagctactga	27945	-	see also 5233 line	DNA binding
11217	HBXAP	NM_016578.3	2429	atgtctgtctgctacttaagaaga	28019	-	transcription_regulat or	-
11218	HELLS	NM_018063.3	2503	tttgtatgatagaatgacttat	28127	-	see also 7231 line	-
11219	HEMK	NM_018173.1	306	ggattatcaaccctccagaacct	28136	-	protein methyltransferase	-
11220	Hes4	NM_021170.2	252	gcaccagcgcgcctataaacaga	28150	-	transcription_regulat or	-
11221	HPK1	NM_152866.3	1781	cggaggggttccactctatgataac	28198	-	see also 9919 line	-
11222	HST1HA	NM_005325.2	648	aggctggagtcgacgaagctgc	28243	-	-	DNA binding
11223	HST1HB	NM_005322.2	216	aggctctctgacgtctctttttg	28245	-	-	DNA binding
11224	HST1HC	NM_005319.3	313	ggccactctctgcttcacgaaga	28250	-	-	DNA binding
11225	HST1HD	NM_005320.2	670	ggaggaagccgaagttatacaag	28260	-	-	DNA binding
11226	HST1HE	NM_005321.2	178	gtttccgaactctacttaaacgc	28263	-	-	DNA binding
11227	HST1HF	NM_005323.3	122	aggaaagccgcttgctctgaag	28267	-	-	DNA binding
11228	A	NM_170745.2	253	cagctagtcgctctcgaattgaa	28287	-	-	-
11229	HST1HZ	NM_005102.2	41	aggctagaagccgcttctcaag	28291	-	-	DNA binding

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11230	HIST1H2B A	NM_170610.2	97	aggaccgctaaagagagattatc	28295	-	-	-
11231	HIST1H2B M	NM_003521.2	39	aggctcaagaagacccaataaca	28301	-	DNA binding	-
11232	HIST1H2B O	NM_003527.4	39	atgcaccagccgcgaataatcgc	28302	-	DNA binding	-
11233	HIST1H3C	NM_009531.2	55	agagctctgcataaagacagc	28306	-	DNA binding	-
11234	HIST1H4A	NM_009538.3	135	gcgactctcctgcctgacacag	28307	-	DNA binding	-
11235	HIST1H4F	NM_009540.3	17	aaactctgaagcttggaag	28311	-	-	-
11236	HIVEP1	NM_002114.1	4723	cagctcaactgacatcttgc	28416	-	see also 1362 line	-
11237	HWR1	NM_181786.2	1324	cagcgtcgaagccttatgtctgc	28515	-	transcription, regulat	-
11238	HMG2L1	NM_005487.2	726	atggtctgcctccacaactcgaaa	28527	-	or see also 3815 line	-
11239	HMG4L	NM_178467.1	219	ggagcggaagcagctctcaattg	28559	-	transcription, regulat	-
11240	HMGN3	NM_004242.2	209	ggagcgaagcttgatccaagt	28561	-	DNA binding	-
11241	HNRPD	NM_002138.2	722	agaactcggagatgtgataag	28570	-	-	-
11242	HNRPK	NM_002140.2	460	ccgagcgcctatctgatactagt	28587	-	see also 1368 line	-
11243	HNRPU	NM_004801.2	2334	ggagatcggcgcgatataatag	28630	-	-	-
11244	HP1-BP74	NM_016287.1	140	ctgattccagcgcgcaaatagg	28642	-	see also 3053 line	-
11245	HRB	NM_004504.3	1271	atgcgtatctctccaaatgaat	28693	-	see also 3058 line	-
11246	HRBL	NM_006076.3	247	cgagctcaactcctgcgaatgaat	28704	-	-	-
11247	HSPC133	NM_014168.1	333	agagcatttggaattatgaat	28718	-	-	-
11248	HSPC195	NM_016463.5	1479	caagcatttggaattgcaaaa	28721	-	kinase related	-
11249	HT001	NM_014065.2	444	tggatctcgaagcctcaatgaat	28722	-	-	-
11250	HTR3A	NM_000869.1	388	aagcccaaccacccatcatcaaa	28777	-	channel, serotonin- activated cation- selective channel	-
11251	IDAX	NM_025212.1	341	cgctctccctccagatcatctcc	28800	-	receptor activity signal transduction	-
11252	ILF3	NM_004516.2	715	tgcacagctgctgctgctgata	28819	-	transcription, regulat	-
11253	ING1	NM_005537.3	1578	ggcgttgagccttcatcataaac	28849	-	cell cycle, transcription, regulat	-
11254	ING3	NM_019071.2	379	tggcaaaccaagatatatgcttg	28861	-	or see also 1687 line	-
11255	ING4	NM_016162.2	527	gtgcacccaagctcctgctgagg	28899	-	transcription, regulat	-
11256	INSM1	NM_002196.1	1593	cgcccttaccgagcaatcaaca	28903	-	or	-
11257	IRLB	NM_005648.1	2308	ggcgttgatgagctgactatag	28983	-	transcription, regulat	-
11258	JADE1	NM_024900.2	391	cttcaatccgagctgactatgct	29110	-	apoptosis, transcription, regulat	-
11259	JD2	NM_130469.2	483	cagccagatcccgcaacagagag	29140	-	or see also 9546 line	-

breast cancer(乳腺癌), gastric cancer(胃癌)

図46 (続き)

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11260	IKAI	NM_004973.2	3383	atgagcgtcccatataacaa	29183	-	see also 3457 line
11261	IKJ1D2	NM_014663.1	1668	cgtgctatccagcttctatc	29221	-	see also 5842 line
11262	JKK	NM_00374.1	1449	agcctctgagcgtttcttca	29266	-	-
11263	JKKL	NM_00377.2	911	ggcgcgagctgcgtgatttt	29291	-	-
11264	KKNMA1	NM_002247.2	3144	ggcgcgagctgcgtgatttt	29380	-	see also 1439 line
11265	KKA00211	NM_014630.1	3562	ggcgcgagctgcgtgatttt	29423	-	see also 5768 line
11266	KKA00222	NM_014630.1	898	ggcgcgagctgcgtgatttt	29435	-	see also 3813 line
11267	KKA00296	NM_014699.1	1802	ggcgcgagctgcgtgatttt	29468	-	see also 3813 line
11268	KKA00352	NM_014830.1	1235	cggaaactccgggttaatttc	29495	-	see also 6040 line
11269	KKA00478	NM_014870.2	446	atgtgttacaacggcgaactaac	29511	-	transcription_regulat
11270	KKA00628	NM_014789.1	797	ttggcgtatcagcgttcttctca	29551	-	DNA binding
11271	KKA00945	NM_014952.1	2545	ttggcgtatcagcgttcttctca	29575	-	DNA binding
11272	KKAA1111	NM_015107.1	211	ttggcgtatcagcgttcttctca	29576	-	see also 6248 line
11273	KKA11196	NM_020713.1	405	cagcgtatcagcgttcttctca	29633	-	transcription_regulat
11274	KKA1259	NM_017553.1	4648	gggttaaacatgttctaaaggaat	29740	-	or
11275	KKA1333	NM_017769.2	958	atgtgttacaacggcgaactaac	29761	-	transcription_regulat
11276	KKA1706	NM_030636.1	2210	cagcgtatcagcgttcttctca	29813	-	or
11277	KKA1750	NM_033512.1	918	agcgttctgagcgttcttctca	29823	-	-
11278	KKA1946	NM_172542.2	1971	cagcgttctgagcgttcttctca	29887	-	-
11279	KLF22	NM_007317.1	39	tggtctgtcgtgcttaacgaaga	29902	-	see also 10164 line
11280	KLF15	NM_014079.2	482	gggttaaacatgttctaaaggaat	29923	-	transcription_regulat
11281	KLF16	NM_031918.1	41	acgtgtctgagcgttcttctca	29927	-	transcription_regulat
11282	KLF5	NM_001730.2	1005	ctgtatacaccgctcttagatat	29944	-	DNA binding
11283	KLF10	NM_152467.1	1518	ttgtatagcgttcttcttctg	29997	-	transcription_regulat
11284	KNSL7	NM_020242.1	3942	aggttaaacatgttctaaaggaat	30109	-	see also 9878 line
11285	LAF4	NM_002265.1	2971	atgtgtctgagcgttcttctca	30153	-	see also 7817 line
11286	LBR	NM_002296.2	1768	ttgtgtcaccaccgaacttctg	30216	-	transcription_regulat
11287	LX	NM_030625.1	3877	tggtctatacagcgttcttctca	30359	-	or
11288	LDB1	NM_003893.3	917	gggttaaacatgttctaaaggaat	30433	-	see also 2647 line
11289	LDB2	NM_001290.1	394	aggttaaacatgttctaaaggaat	30458	-	see also 945 line
11290	LEF1	NM_016268.2	979	tggtgttctgagcgttcttctca	30488	-	transcription_regulat
11291	LHFP	NM_005760.1	712	aggttaaacatgttctaaaggaat	30519	-	Lymphoid enhancer
11292	LIG3	NM_002311.2	2174	aggttaaacatgttctaaaggaat	30561	-	binding factor 1
11293	LIG4	NM_002312.2	2712	tggtctatacagcgttcttctca	30687	-	see also 1480 line
11294	LJN28	NM_024874.3	607	caagcgtatcagcgttcttctca	30704	-	see also 1484 line

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11295	LOC11288 5	NM_138415.1	1388	ctggccatcgtgcctctctatgt	30709	-	transcription_regulat or	-
11296	LOC11595 0	NM_138783.1	1360	atgtcagccatctctatgaat	30717	-	transcription_regulat or	-
11297	LOC11758	NM_057178.2	1019	ggagctgaccgctcctctacccg	30727	-	see also 9500 line	-
11298	LOC15187	NM_138815.2	609	ggagctctatgactctctacc	30746	-	-	-
11299	LOC15322	NM_153807.1	1662	ctgagctggacagcgtctacttg	30785	-	see also 9987 line	-
11300	LOC22114	NM_174928.1	190	agggcggagatgaataataaca	30809	-	-	-
11301	LOC28324	NM_173587.2	920	aagcaccgcagccgaactagtgt	30833	-	-	-
11302	LOC56959	NM_020207.1	267	ataggcagcagatgacgatttg	30844	-	transcription_regulat or	-
11303	LOC57117	NM_020395.2	1318	ctgctctattgcgtcagctagt	30918	-	-	-
11304	LOC58486	NM_021211.1	1343	tttctgttcttgcttcttctaaag	30961	-	-	-
11305	LOC64744	NM_022733.1	607	cagcgcctctctatgcttcttctg	31024	-	see also 8436 line	-
11306	LOC90668	NM_138360.1	1082	cagcaaacgtgcgcgaagcttc	31035	-	-	-
11307	LOC93249	NM_138402.2	593	ggagaaagctctctctctaac	31043	-	-	-
11308	LRP1B	NM_018557.1	5939	tgagttgagctgcacgttaatta	31211	-	see also 7512 line	-
11309	MAZ	NM_002383.1	761	gagttctaaagaaacgctcacatct	31550	-	transcription_regulat or	RNA polymerase II transcription factor
11310	MBD3	NM_003276.5	347	aagcagccagctgaccacaagcttc	31558	-	see also 2687 line	-
11311	MBD5	NM_018328.3	4424	tagaccacaaggaacttcaatttg	31679	-	-	-
11312	MCN2	NM_004526.2	103	cagcctgcgcgagcaagatccc	31691	-	phosphatase, cell cycle, transcription_regulat or	DNA dependent adenosinetriphosph atase
11313	MCN3	NM_002388.3	567	aagacacatgagcgcgcgttttc	31723	-	phosphatase, cell cycle, transcription_regulat or	DNA dependent adenosinetriphosph atase
11314	MCN3AP	NM_003306.3	2217	gccttgacatacggagaagatata	31802	-	phosphatase, transcription_regulat or	-
11315	MCN4	NM_005914.2	1834	tggctctacgtcgtctactaaga	31873	-	see also 4136 line	-
11316	MCN6	NM_005915.4	2229	ctgagctgaccgaactctctaac	31977	-	phosphatase, cell cycle, transcription_regulat or	DNA dependent adenosinetriphosph atase
11317	MCN7	NM_005916.3	1248	ggagaatatctcctctagtatca	32003	-	phosphatase, cell cycle, transcription_regulat or	-
11318	MCN8	NM_032485.4	1050	ggctctctctctcagtaataaaa	32047	-	phosphatase, cell cycle, transcription_regulat or	-
11319	MCND1	NM_152355.2	240	atgataagcatcagttactaac	32100	-	phosphatase	-

図46 (続き)

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11348	NAP1L4	NM_005969.2	361	caagctgagatctgctacataga	33500	-	-	chaperone	-
11349	NCL	NM_005381.1	1358	ctctgagagctcagatctcagc	33534	-	-	RNA binding	-
11350	NCOR1	NM_006311.2	4356	gaacacacagccagcaatctgagc	33632	-	see also 4410 line	transcription co-repressor	-
11351	NCOR2	NM_006312.1	860	aggaatcaagctcagcaaacatgc	33700	-	or	cell cycle, transcription, regulator	-
11352	NDN	NM_002487.2	466	atgtcatctcggcagctacacagag	33733	-	or	DNA binding	-
11353	NEUROD1	NM_002500.1	1088	ggatctccctcagccatctatct	33744	-	see also 1608 line	transcription, regulator	-
11354	NEUROD4	NM_021191.1	721	aagctcctcttggaagatctcagc	33752	-	transcription, regulator	translation regulator	-
11355	NEUROG3	NM_020899.1	424	acgcaccgcgctccatctcagatgc	33799	-	transcription, regulator	translation regulator	-
11356	NIRF	NM_152206.2	1638	ttgattctacaggagatgtact	33847	-	see also 9835 line	transcription, regulator	-
11357	NONO	NM_007263.3	1343	gtgtatgttcatacaacaacagca	33889	-	pre-mRNA splicing factor	renal cell carcinoma(腎細胞癌)	-
11358	NRBF-2	NM_030759.1	224	caagcagcagcagccgtttattag	33890	-	receptor activity, transcription, regulator	-	-
11359	NRF	NM_017544.1	1552	ttgtcagtgctctctatgaattt	33930	-	transcription, regulator	nucleic acid binding	-
11360	NRF1	NM_005011.2	856	caagcagctacagacccatgttaa	33959	-	transcription, regulator	Nuclear respiratory factor-1	-
11361	NRL	NM_006177.1	744	ccggaggcgcgattctcacagc	33970	-	transcription, regulator	specific RNA polymerase II	-
11362	INTHL1	NM_002324.4	836	aaactctctcaccagatctcaatgc	34178	-	transcription factor	-	-
11363	NUCB1	NM_006184.3	899	gcgcattcgcgggagctatgtatga	34186	-	-	calcium ion binding	-
11364	NUCB2	NM_005073.1	730	aagactgcctcctcaggaatttaa	34205	-	see also 3509 line	-	-
11365	NUPI53	NM_005124.2	2050	tcgcctcgcgcagatgatctct	34282	-	see also 3801 line	-	-
11366	OASL	NM_003733.2	1233	caagttctctcttaccacaatctg	34348	-	-	transferase	-
11367	ORC1L	NM_004153.2	644	atgtgtccagcagcaactctgaaa	34368	-	-	E2F-4/DP-1 complex	-
11368	OSMR	NM_003999.1	1346	ctgtcatctcagctttatttaat	34457	-	receptor activity, signal transduction	-	-
11369	PAX1	NM_006192.1	411	cggcagcctcagcagcaatcaagc	34504	-	see also 4280 line	-	-
11370	PAX5	NM_016734.1	1545	tttgtctccctctattattatgc	34521	-	transcription, regulator	DNA binding	bladder transitional cell carcinoma(膀胱移行上皮癌), medulloblastoma(髓母瘤)
11371	PAX9	NM_006194.1	801	aggtcattcagctacatatacaag	34523	-	transcription, regulator	DNA binding	-
11372	PC326	NM_018442.1	911	caagctcattcagcaactctctcc	34539	-	or	-	-
11373	PCBP3	NM_020528.1	790	caagtggtcagctcctccatctc	34578	-	see also 7889 line	-	-
11374	PCDH1	NM_002587.3	973	ggagccgagcactctctgagatag	34595	-	transcription, regulator	-	-

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11375	PCNA	NM_002592.2	526	cgagctccctgctgactgatt	34925	-	-	cell cycle	-	lymphoid cancer (喉頭癌), non-hodgkin lymphoma (非ホジキンリンパ腫), breast cancer (乳癌), ocular melanoma (眼メラノーマ), skin cancer (皮膚癌), Hodgkin's disease (ホジキン病)
11376	PDD2	NM_002596.2	603	cgatcatctgacactaat	34943	-	-	apoptosis	-	-
11377	PHF11	NM_016119.1	152	ctgcccaagatgctgcatata	34679	-	-	transcription_regulat	-	-
11378	PHF12	NM_020693.1	1187	ggcggagaccgcccaacttca	34701	-	-	transcription_regulat	-	-
11379	PHF13	NM_153812.1	841	ggctccactctgcagatattcc	34740	-	-	transcription_regulat	-	-
11380	PHF14	NM_014060.1	2165	gggataatcaagatattcttc	34789	-	-	transcription_regulat	-	-
11381	PHF15	NM_015298.4	1441	aggcaatgctgactatctatcac	34822	-	-	see also 5831 line	-	-
11382	PHF16	NM_014735.2	2174	cctgctctgagtgctatctatgg	34870	-	-	see also 5924 line	-	-
11383	PHF3	NM_015153.1	627	cgagcgaatagcggacaatttg	34897	-	-	transcription_regulat	-	-
11384	PHF6	NM_032335.1	712	atggaagtgattctctatgaga	35048	-	-	see also 9165 line	-	-
11385	PIAS3	NM_006099.2	838	ctgattgtgcagcgaattctcc	35134	-	-	transcription_regulat	-	-
11386	PIAS7	NM_015897.2	308	cgcctgcagagcccaattatga	35155	-	-	transcription_regulat	-	-
11387	PIK4A	NM_002650.1	1371	gggctatgtccggagatatttc	35180	-	-	kinase related	-	-
11388	PIA2	NM_014819.1	815	tggctttgaccatttgatgaaa	35276	-	-	signal transduction	-	-
11389	PLA3	NM_020318.1	1598	acgttatctgctgcaatcaaga	35317	-	-	see also 6012 line	-	-
11390	PLA3L1	NM_002656.2	2876	ctgcagatgctgtgaacctaac	35404	-	-	cell cycle, apoptosis, transcription_regulat	-	-
11391	PMST	NM_005842.2	2724	ggcgctctatccagacaattacc	35502	-	-	see also 404 line	-	-
11392	PMST	NM_005835.2	608	cagcagatccctgtaagtgtcc	35507	-	-	-	-	-
11393	POGK	NM_017542.3	1778	tgcgttgagatgcactcctaatt	35547	-	-	see also 1022 line	-	-
11394	POG2	NM_015100.1	387	acgttgagacaaatcacactatt	35561	-	-	see also 6238 line	-	-
11395	POLA	NM_016937.1	3943	ttgcagacactgattgttaagg	35715	-	-	see also 6972 line	-	-
11396	POLB	NM_002690.1	172	cagacactgcgaactctggaag	35731	-	-	see also 1752 line	-	-
11397	POLD1	NM_002691.1	2216	ggatttgagacgtgcagatctag	35766	-	-	-	-	-
11398	POLD3	NM_006591.1	973	ggaggaagcgtgcagatctatc	35787	-	-	zeta DNA polymerase	-	-

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11399	POL2	NM_006892.2	758	tgatctactacgagcactacg	35904	-	-	-	zeta DNA polymerase
11400	POL2	NM_017443.3	398	tgatgtttccagcgtttgtttac	35932	-	-	-	-
11401	POL2	NM_016886.2	220	ggagatcttggttaacacatg	35935	-	-	-	-
11402	POL2	NM_002693.1	2665	ggagagcccaaacacacatca	35960	-	see also 1754 line	-	-
11403	POL2	NM_013274.2	1518	cagtgactctctggaaacgtgpc	35980	-	-	-	zeta DNA polymerase
11404	POL2	NM_013284.1	818	agagactctgaaccttaatgac	35988	-	-	-	zeta DNA polymerase
11405	POL2	NM_015425.1	207	cggcaaacgagctttacgattta	36000	-	see also 6408 line	-	-
11406	POL2	NM_019014.2	3352	gtgtatgcgaatgaactacacg	36171	-	-	-	-
11407	POL2	NM_004875.1	787	gtgtcttcacctgtgtttatg	36192	-	-	-	-
11408	POL2	NM_000937.2	2895	tcgtctccgagctgaagatttcc	36233	-	-	-	-
11409	POL2	NM_000938.1	3538	ggatgtgtcacgcgaatgata	36404	-	see also 616 line	-	DNA-directed RNA polymerase III
11410	POL2	NM_002894.2	139	ctggcgtgtgccaatgctgtag	36407	-	-	-	-
11411	POL2	NM_021974.2	105	tggccagacgctttgatgatgag	36427	-	-	-	DNA-directed RNA polymerase III
11412	POL2	NM_005034.2	182	gtggatcacagaaatgtacaag	36435	-	-	-	-
11413	POL2	NM_005035.2	1843	cagctctctacacagctgtttcc	36439	-	-	-	-
11414	POL2	NM_006899.2	955	ggagctatgacatcagctatg	36466	-	-	-	-
11415	POL2	NM_004174.2	489	atgtacacacagctcagatggt	36486	-	see also 4887 line	-	-
11416	POL2	NM_003261.2	1892	ttggatgtgcagcgaatcctatt	36628	-	see also 5284 line	-	-
11417	POL2	NM_003822.2	417	ggcgaatgtggtgttatctaac	36644	-	-	-	-
11418	POL2	NM_005710.1	867	atggaccctagtctactactaga	36728	-	-	-	-
11419	POL2	NM_020228.1	1031	atgaatgaacgcgcatattata	38743	-	-	-	-
11420	POL2	NM_021619.2	489	tggcaagctgctactactatcg	38781	-	-	-	-
11421	POL2	NM_021620.1	2029	aagcttactctgcgcgaatgag	36795	-	-	-	-
11422	POL2	NM_024504.1	1079	gtgaagcctacagagacaaatc	36806	-	-	-	-
11423	POL2	NM_012406.2	1137	ggagcagctcagatgagatato	36844	-	-	-	-
11424	POL2	NM_016699.1	336	ctgtctctgtctgtctgtaggg	36872	-	-	-	-
11425	POL2	NM_013388.3	682	gtgtctctaacacagcgaatcac	36921	-	-	-	-
11426	POL2	NM_000947.1	820	tggatgtctgagctattatgaag	36946	-	-	-	-

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11427	PRKCBP1	NM_012408.3	1024	cgagcttcgacccatctcttag	38983	-	transcription_regulat	-	-
11428	PRKBR	NM_004705.2	1863	ggctcttcctccacatctataga	37082	-	see also 3228 line	-	-
11429	PTPRF	NM_002840.2	3438	aggcttcaccactctataagctca	37154	-	receptor_activity, phosphatase, signal_transduction	small cell lung cancer(肺癌)	-
11430	PYGO1	NM_015617.1	1204	caattatctgtctactcaggaagao	37217	-	transcription_regulat	-	-
11431	PYGO2	NM_138300.2	265	ggcgaagccgctctcacaattca	37219	-	or,	-	-
11432	RAB10	NM_016131.2	745	cgaggagcaatggatgactatctac	37230	-	see also 6884 line	-	-
11433	RAB25	NM_020387.1	928	tgtccctttgttcagatgatactca	37252	-	signal_transduction	protein transporter	-
11434	RABGEF1	NM_014504.1	1286	tgtcttgatgtctcaagacaagt	37272	-	-	-	-
11435	RAD17	NM_022873.1	1214	ggcgcacaaatctatcacagttca	37304	-	see also 1910 line	-	-
11436	RAD52	NM_002879.2	310	ggaggtctcatgggttaatttaact	37341	-	see also 1919 line	-	-
11437	RAD54B	NM_012415.2	2139	aaagctcatcagatctgtctatctac	37419	-	-	-	-
11438	RAD54L	NM_003579.2	2280	ccgtgtcccaagatgactattacg	37475	-	see also 2374 line	-	-
11439	RAG1	NM_000448.1	2411	tggctcttcacacccctaccatgca	37534	-	endonuclease	severe combined immunodeficiency disease(重 症複合型免疫不全症)	-
11440	RAG2	NM_000536.1	728	tgtgtgtgtctcatcatcaatt	37585	-	endonuclease	severe combined immunodeficiency disease(重 症複合型免疫不全症)	-
11441	RAL1	NM_020665.3	6118	caagcagatcaaggttgcatatca	37631	-	transcription_regulat	-	-
11442	RBL2	NM_005611.2	2797	cgagcaatctatgctttttttatag	37718	-	see also 3888 line	-	-
11443	RBM5	NM_005718.1	278	atgtctctggggagagagatgt	37793	-	see also 4039 line	-	-
11444	RBM6	NM_005777.1	519	aggcagacacatctggcccttagg	37795	-	see also 4031 line	-	-
11445	RBP50H	NM_003549.1	1410	aggctccctcacaagatcacaac	37890	-	see also 3734 line	-	-
11446	RBP50L	NM_014276.2	473	ctggagcagcgaagctgaatttc	37905	-	-	-	-
11447	RECQL	NM_002907.2	2156	cgcttatctctaccatttgttt	37991	-	-	-	-
11448	REPINT	NM_013400.1	936	cgaggagcctgttaccatbaagc	37998	-	-	-	-
11449	REVL	NM_002912.1	8827	gggtgtggcagatgattgtttca	38249	-	see also 1946 line	-	-
11450	RFC1	NM_002913.3	1273	aggctctcagaagctacttaaat	38338	-	see also 1958 line	-	-
11451	RFC2	NM_002914.3	477	tgtcagctctcgtgtcacacaag	38404	-	-	-	-
11452	RFC3	NM_002915.2	120	tgagcagcttgactatctcacaag	38420	-	-	-	-
11453	RFC4	NM_002916.3	896	ggaggaatagctctctctgttaa	38464	-	see also 1963 line	-	-
11454	RFC5	NM_007370.3	941	agggtgttgacactgcatgatac	38487	-	-	-	-
11455	RFP	NM_006510.3	978	tagactgtgcactctacaatagc	38498	-	kinase,related, transcription_regulat	-	-
11456	RF2	NM_000635.2	1287	cctcgaagccaactctagatctag	38509	-	transcription_regulat	-	-
11457	RF4	NM_009320.3	1090	ctgagcagccaacatctatcaca	38535	-	transcription_regulat	-	-
11458	RF20G1	NM_173586.1	1568	ttagctctctggaatgaatgaaat	38598	-	see also 10883 line	-	-

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11459	RPC155	NM_007055.2	253	tgaggtgctgcacacatgacatgg	38641	-	see also 4940 line	transcription_regulat	translation	regulator	-	
11460	RREB1	NM_002955.3	1727	ctgagctcttcaactcttgaagc	38758	-	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)	
11461	RUNX3	NM_004350.1	377	atgctctcgcgcgtatcaaaagc	38775	-	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)	
11462	SARF2	NM_014643.1	1240	acgcctcgcgcgtatcaaaagc	38788	-	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)	
11463	SALL1	NM_002968.1	555	aggcaactctctgcgtatcaaca	38817	-	see also 1989 line	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)
11464	SALL3	NM_017989.1	3852	ccgcacatctcgcgcgtatctatg	38872	-	transcription_regulat	transcription_regulat	or	DNA binding	-	
11465	SALL4	NM_020436.2	275	gagcgcgcactcttggaagtg	38878	-	see also 7875 line	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)
11466	SCOTIN	NM_016479.3	281	ttgtacctgtgcgcacact	38917	-	kinase related	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)
11467	SEZD-4	NM_022117.1	374	ggcgatctgcgcgcgtatctaacg	38921	-	see also 8281 line	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)
11468	SETBP1	NM_015559.1	1034	aactctctcgcgcgtatctaac	38973	-	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)	
11469	SETDB1	NM_012432.1	2845	caagtgcgcgcgtatctaac	39079	-	see also 5321 line	transcription_regulat	transcription_regulat	or	transcription factor	gastric cancer(胃癌)
11470	SETDB2	NM_031815.1	1379	cgactctgcgcgcgtatctaac	39120	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11471	SFPQ	NM_005066.1	1533	atgctcgcgcgcgtatctaac	39201	-	see also 3531 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11472	SHPRH	NM_017082.1	1560	ctgacacatctgcgcgcgtatg	39254	-	see also 10050 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11473	SIRT1	NM_012238.3	588	aggccacgcgcgtatctaac	39380	-	see also 5214 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11474	SIRT2	NM_012237.2	312	atgacactctgcgcgcgtat	39445	-	cell cycle,	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11475	SIRT3	NM_012239.3	964	aggccacgcgcgtatcttttgg	39465	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11476	SIRT4	NM_012240.1	667	aggctccacgcgcgtcttaactg	39478	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11477	SIRT5	NM_012241.2	313	ttgtccacgcgcgtatctaac	39481	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11478	SIRT6	NM_016539.1	426	aggctctccgcgcgcgcgtatg	39495	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11479	SLK	NM_014720.1	3446	ggctctgagacgcgcgcgtatg	39571	-	see also 5913 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11480	SNAP1	NM_021940.2	1327	ttgtccacgcgcgcgtatctg	39614	-	see also 8204 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11481	SNARCA1	NM_003069.2	1007	ttgcataacctggtatgtag	39647	-	see also 2053 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11482	SNARCA2	NM_003070.2	2423	ttgtccctctgacctctatct	39737	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11483	SNARCA3	NM_003071.2	2319	ttgtcttagacctgcgcgaatttg	39841	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11484	SNARCA5	NM_003801.2	1956	aggctccacgcgcgtatctaac	39905	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11485	1	NM_020159.1	1924	ctttctctcgcgcgcgcgtatg	39998	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11486	SNARCA1	NM_014140.2	856	ttgtccacgcgcgcgtatctg	40082	-	see also 5513 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11487	SNARCF1	NM_006015.3	6552	ttgtccacgcgcgcgcgtatg	40169	-	see also 4188 line	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)
11488	SNCY	NM_004653.2	741	ctgtccgcgcgcgcgtatctaacg	40209	-	transcription_regulat	transcription_regulat	transcription_regulat	transcription_regulat	transcription factor	gastric cancer(胃癌)

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11519	SSRP1	NM_003146.2	1403	tgcctctgtgtacacactact	41226	-	see also 2127 line or	transcription_regulat	-
11520	SUHW2	NM_080764.2	1273	atgaagctctctgtgtacaag	41257	-	-	-	-
11521	STCP1	NM_003176.2	3066	ggagacgtttgagctgaattgc	41322	-	-	DNA binding	-
11522	STCP2	NM_0142568.2	2632	gtcgatgagctgaattagattg	41408	-	-	-	-
11523	TAFl	NM_004008.2	5574	cgtgtggtgtgagatcatcagag	41477	-	-	transcription_regulat cell cycle	-
11524	TAFl1	NM_005643.2	651	agcccttgcagctgaagctca	41494	-	see also 3916 line	-	-
11525	TAFl2	NM_005644.2	249	aaagctcatagcctcaattact	41497	-	see also 3917 line	transcription_regulat	-
11526	TAFl6	NM_005641.2	748	ttgctacagctccttaagctbaag	41513	-	or	-	-
11527	TAFl8	NM_006473.2	757	tgcagcagctcctattcttaact	41555	-	or	transcription_regulat	-
11528	TAFl9	NM_015975.3	536	gtctgttaattgtaacaaactact	41585	-	or	transcription_regulat translation regulator	-
11529	TAL1	NM_003188.1	1131	aaattgtgcgagctgattctacc	41589	-	or	transcription_regulat protein binding	lymphoma(リンパ腫)、leukemia(白血病)
11530	TAL2	NM_005421.1	267	cagaactctctgttgaagctacc	41590	-	or	transcription_regulat TFIID complex	leukemia(白血病)
11531	TBP	NM_003194.2	789	gtcccggaacgcgaaleaak	41598	-	or	-	-
11532	TBP11	NM_004865.2	691	caattctggaacgaactctctct	41623	-	see also 3383 line	-	-
11533	TBP11	NM_032811.1	536	cagctcttgaggacatctacag	41630	-	-	-	-
11534	TCF12	NM_003205.2	1942	gagagcagatgagctcaacagc	41687	-	see also 2171 line	-	-
11535	TCF20	NM_005650.1	2240	tgaagctctgctctctgctacc	41731	-	see also 3919 line	RNA polymerase II transcription_regulat transcription factor	-
11536	TCF21	NM_003206.2	761	gtgcacgcgagcagctgtgtgag	41817	-	or	-	-
11537	TCF4	NM_003199.1	2170	ggagagcagctgagctcaactgag	41851	-	see also 2161 line	transcription_regulat	-
11538	TCF7	NM_003202.1	303	ctgactctctgtctctctctcc	41855	-	or	transcription_regulat T-cell factor 1G	-
11539	TCF1	NM_005997.1	668	ggggccataatcaactatattct	41865	-	or	RNA polymerase II transcription factor	-
11540	THAP1	NM_020457.2	265	gtgtccagctgtctctacacac	41910	-	-	-	-
11541	THAP6	NM_144721.2	498	tctggcgtctgagagctacaaag	41929	-	-	-	-
11542	THAP7	NM_030573.1	342	cggcatcagatcaactcttctct	41937	-	see also 8880 line	-	-
11543	TIAL1	NM_003252.2	820	tcgttaacagctactagctattga	41961	-	see also 2195 line	-	-
11544	TIF1	NM_003852.2	1822	ttgttaacagctactagctattga	42006	-	see also 2816 line	-	-
11545	TIGD4	NM_145720.2	1560	atgaactctgattgttttttttttt	42088	-	-	-	-
11546	TIGD5	NM_032882.2	180	ggatcactcagcgaagattgttc	42105	-	-	-	-
11547	TIGD6	NM_030953.2	645	gaattctcagcgaagattgttttc	42124	-	-	-	-
11548	TIGD7	NM_032208.2	1845	ggagagctcagcgaagattgttttc	42162	-	-	-	-
11549	TIMELESS	NM_003920.1	2690	tgggacacactgatactgcttcc	42253	-	see also 2882 line	transcription_regulat transcription cofactor	-
11550	TWAF1	NM_007114.1	131	atgpagcgcgtggaattgaattcc	42267	-	or	-	-

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11551	TMX2	NM_015559.1	106	atgctgctgcacaaacttactac	42353	-	-	-	-
11552	TNFAIP3	NM_006290.2	1015	ttggccactggcacaactctct	42391	-	see also 4384 line	transcription_regulat	-
11553	TNP1	NM_003284.2	30	atgtcgcacgcgcgaataaa	42402	-	or	DNA binding	-
11554	TNXB	NM_019105.4	11684	gacgagccagctcaaaagtcttc	42440	-	see also 7710 line	DNA	-
11555	TOP1MT	NM_052983.1	1160	aagccggtgtacaaagaactaca	42501	-	-	topoisomerase I	-
11556	TOP2A	NM_001087.2	2525	cctgctatcagctatcatcttt	42581	-	see also 855 line	-	-
11557	TOP2B	NM_001088.2	1011	aggtgagctgcagctgattatg	42675	-	see also 856 line	-	-
11558	TOP3A	NM_004018.2	748	ggtgtcgcgcgcgtctctctga	42780	-	see also 3135 line	DNA	-
11559	TOP3B	NM_003835.3	2066	tgtgtcaccttactataaagatt	42843	-	-	topoisomerase I	-
11560	TOX	NM_014729.1	897	aagcctgctgatactataagtc	42883	-	see also 5919 line	-	-
11561	TRERF1	NM_018415.1	3313	tggtgtactcttggtaagaagc	42907	-	see also 7454 line	zinc binding	-
11562	TRIM26	NM_003449.2	974	agagcacctgagagcttctctaaac	42920	-	-	transcription_regulat	-
11563	TRIM33	NM_015906.2	3158	tgtcctgattctcgtttatcttc	43004	-	or	thyroid carcinoma(甲状腺腫)	-
11564	TRPV6	NM_018846.2	1599	ctgtgtcaacgtctgactctg	43020	-	receptor activity	-	-
11565	TSIG101	NM_006292.2	943	atgttatccgcttttagctcaaga	43049	-	see also 1386 line	-	-
11566	TSN	NM_004622.2	812	aaacctgaacagcagattgaata	43072	-	-	DNA binding	-
11567	TSNAX	NM_005599.2	501	caattctaatcagcgaattctctac	43088	-	see also 4185 line	-	-
11568	TSPYL3	NM_178465.1	625	atgtatcagcctctgaattgaaga	43115	-	-	-	-
11569	TSPYL4	NM_021648.3	182	atgtcagcagagattcttatt	43118	-	-	-	-
11570	TTF2	NM_009594.3	1758	tgtgtactatgcgcgaagaatca	43150	-	transcription_regulat	-	-
11571	UBTF	NM_014233.1	2065	caggacccctgcacataaaga	43212	-	or, phosphatase	-	-
11572	UPLC1	NM_017707.2	273	ccggagagctccttgatctcttag	43218	-	see also 5550 line	-	-
11573	USF1	NM_007122.2	449	cagctgtgtgacgcactact	43236	-	see also 4958 line	-	-
11574	VAT1	NM_006373.2	556	cttgtctgtctcaattacatt	43254	-	-	zinc binding	-
11575	WBSCH14	NM_032951.1	2582	agggcaccccttgcgaaccttta	43272	-	transcription_regulat	-	-
11576	WHD1	NM_007086.1	884	tgtctgatactgtactatg	43302	-	or	-	-
11577	WOTC1	NM_015023.2	1130	cggtgcagccattattactag	43397	-	see also 6189 line	-	-
11578	WHSC1	NM_007331.1	2262	ctgtctgtgctgttaaacact	43448	-	transcription_regulat	Wolf-Hirschhorn syndrome(Wolf-Hirschhorn症候群)	-
11579	WHSC1L1	NM_017778.2	1494	cggtgtgagctgattaaagtca	43519	-	transcription_regulat	-	-
11580	WRN	NM_000553.2	1826	atggaccccaacacttatcatt	43646	-	or	DNA helicase	-
11581	WRNIP1	NM_020135.2	1298	atggacccctctgattgattctto	43764	-	-	-	-
11582	YBX2	NM_015982.1	369	atgttatgctgtctcaaaag	43774	-	-	-	-
11583	ZBED3	NM_032367.1	918	agagcagctgctgtatcaaaag	43778	-	-	-	-
11584	ZBED4	NM_014838.1	1087	cggtcccccgtctgataacaga	43793	-	-	DNA binding	-

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11585	ZBT82	NM_020861.1	215	cgatttcatttcgagcgtatcac	43831	transcription_regulat	-
11586	ZBT83	NM_024784.2	781	cgagtcagcccaacgctctgct	43873	see also 8746 line	-
11587	ZF	NM_021212.1	488	cgaggatgagcattctcgtct	43884	transcription_regulat	-
11588	ZFD25	NM_016220.2	2395	cgattctctctcttaataacaa	43891	molecular function unknown	-
11589	ZFP161	NM_003409.2	695	aagtttcgaagtcattctctac	43912	transcription_regulat	-
11590	ZFP28	NM_020828.1	219	atggaatgcttcgcatccaaagc	43922	transcription_regulat	-
11591	ZFP36	NM_003407.1	999	cgccgctccctctcttaattcg	43954	protein binding	-
11592	ZFP84	NM_018197.2	827	aaggaatgagcgcgcatatcaa	43964	transcription_regulat	-
11593	ZFX	NM_003410.1	769	ctgactacgcgcgttagtttaaga	43987	transcription_regulat	-
11594	ZFY	NM_003411.2	2320	atctgctcttcacaaagctaaa	43999	transcription_regulat	-
11595	ZIC2	NM_007129.2	1280	cgccgcagctcgcgcctgattctg	44003	transcription_regulat	-
11596	ZIC3	NM_003413.2	1141	cgagctctgaattctctaaactaa	44004	DNA binding	holoprosencephaly(全前脳症)
11597	ZIC4	NM_032153.2	907	cgagctctctctctgattctaa	44018	transcription_regulat	-
11598	ZIC5	NM_033132.2	2219	agagctctctgagacgctcattctg	44034	transcription_regulat	-
11599	ZIM3	NM_052882.1	739	tcagtagcagagctctaaagaaa	44037	DNA binding	-
11600	ZNF10	NM_015394.4	1833	atctggagcagcgtcttaata	44090	DNA binding	-
11601	ZNF124	NM_003431.1	1329	tcggtctgctaccccttggagc	44108	transcription factor	-
11602	ZNF136	NM_003437.2	970	tgtgtcccaaccttaccgaatc	44120	transcription co- repressor	-
11603	ZNF14	NM_021030.2	1114	aagctttctgacacatgtaataa	44136	transcription_regulat	-
11604	ZNF141	NM_003441.1	1379	cgagctggagtaacataagaaa	44145	DNA binding	-
11605	ZNF143	NM_003442.3	1119	gcgctggtctcttcaacatca	44177	specific RNA polymerase II transcription factor	-
11606	ZNF146	NM_007145.1	1439	cgagcgacataactattttaca	44209	transcription_regulat	-
11607	ZNF151	NM_003443.1	1989	tggcttaaacgggtatagaacac	44285	transcription factor	-
11608	ZNF16	NM_006958.2	1476	aagctctccgctgctgaatctg	44300	DNA binding	-
11609	ZNF160	NM_033288.2	786	acgcgcacagagacacatagaaa	44312	transcription_regulat	-
11610	ZNF177	NM_003451.1	1365	aagcactaaccttattatgcaca	44330	transcription_regulat	-

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11611	ZNF180	NM_013256.1	1084	tgtgtattatgaagcttcaatt	44339	-	transcription_regulat or see also 4950 line	DNA binding
11612	ZNF184	NM_007149.1	685	tgtgtgtgaattgttgataga	44355	-	transcription_regulat or	zinc binding
11613	ZNF195	NM_007162.1	1007	atgcgaaggaggaacattcaga	44381	-	transcription_regulat or	zinc binding
11614	ZNF20	NM_021143.1	1971	tgtcaagctctttttccatt	44390	-	-	-
11615	ZNF214	NM_013249.1	853	caagctatgggtgatatacga	44407	-	-	zinc binding
11616	ZNF216	NM_006007.1	770	tgtgtcttaccagttttgactgc	44432	-	-	-
11617	ZNF22	NM_006983.1	183	aagctggagctgctcttctgatt	44434	-	transcription_regulat or	zinc binding
11618	ZNF221	NM_013359.1	1104	gttggaagaagcttccattataga	44442	-	transcription_regulat or	DNA binding
11619	ZNF222	NM_013360.1	452	atgcacacccctccagattaa	44446	-	transcription_regulat or	DNA binding
11620	ZNF223	NM_013361.2	590	aggctcaagactctaccataaa	44452	-	transcription_regulat or	DNA binding
11621	ZNF224	NM_013398.1	451	aagcatctcaagaggtacttctc	44460	-	-	DNA binding
11622	ZNF225	NM_013362.1	537	aagctgttgctgctcatcaaac	44465	-	transcription_regulat or	DNA binding
11623	ZNF226	NM_015919.2	297	aagctgtatcwoctatagaaga	44475	-	transcription_regulat or	-
11624	ZNF228	NM_013380.2	1144	tgtgttgagccttaaatgattt	44521	-	transcription_regulat or	DNA binding
11625	ZNF23	NM_145911.1	2185	caagctatagggaactatgac	44557	-	transcription_regulat or	DNA binding
11626	ZNF230	NM_006300.1	1506	tgtcacacgctctttctgaaa	44588	-	transcription_regulat or	DNA binding
11627	ZNF234	NM_006300.1	1217	tgtgtgctcaaaccttctgctac	44580	-	transcription_regulat or	DNA binding
11628	ZNF235	NM_004234.3	1183	atgtctatttgcctattcacaca	44607	-	transcription_regulat or	DNA binding
11629	ZNF239	NM_005674.1	929	caagctctcttcttgatgaag	44632	-	transcription_regulat or	DNA binding
11630	ZNF25	NM_145011.2	120	gggccccttgatcaataaggctg	44643	-	transcription_regulat or	DNA binding
11631	ZNF258	NM_007167.1	395	aggctcaaacatgctatcaag	44656	-	-	-
11632	ZNF26	NM_019591.2	1360	tgtttcacatccgaatgcatcaca	44708	-	transcription_regulat or	DNA binding
11633	ZNF261	NM_005098.1	4141	cttctctctgcagagattatgaa	44784	-	see also 3559 line	-
11634	ZNF262	NM_005095.1	2669	caagcaagcttccacacaaagcc	44828	-	-	-
11635	ZNF264	NM_003417.1	1347	aggctttctgcgcactctgtg	44866	-	-	DNA binding
11636	ZNF266	NM_006631.2	1647	ggcgaaccttctgattatcga	44876	-	transcription_regulat or	DNA binding

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11637	ZNF267	NM_003414.3	1113	atgagagtagcttaaacctaat	44907	transcription_regulat	DNA binding
11638	ZNF271	NM_006629.3	1654	tatcgcgcgtcttactctattha	44930	see also 4488 line	
11639	ZNF278	NM_014323.2	1745	aagactcttcgttgatgtatca	44947	transcription_regulat	Ewing's sarcoma(ユ-イング肉腫)
11640	ZNF282	NM_003575.1	1256	atggagaccacgcgactcaattg	44965	transcription_regulat	
11641	ZNF288	NM_020652.1	739	ctgacacgaagatgtctctatga	44972	transcription_regulat	
11642	ZNF288	NM_015642.1	2182	ggggcctaccagcttgatctct	45010	see also 6532 line	DNA binding
11643	ZNF289	NM_032389.2	1206	aagatcctgcgctctctatcaaa	45031	see also 3800 line	
11644	ZNF297	NM_005453.3	1572	ggggacggagataagatctctct	45053	see also 5452 line	
11645	ZNF297B	NM_014007.1	2338	tggtgtctgtctgaagaaatca	45082	transcription_regulat	
11646	ZNF300	NM_052860.1	860	ttgacctaccggtgtgtataag	45101	DNA binding	
11647	ZNF302	NM_018443.1	594	cagaaatgcgacacatttgaagc	45113	transcription_regulat	
11648	ZNF304	NM_020657.1	732	atggagagggctctctttctgaag	45123	transcription_regulat	
11649	ZNF317	NM_020933.2	1646	aagcttttcacgcgacttaaac	45151	transcription_regulat	DNA binding
11650	ZNF32	NM_006973.1	389	aagtcactaaagttacatgaga	45162	transcription_regulat	DNA binding
11651	ZNF325	NM_018285.1	1138	atggaggaaccttatctctcaat	45175	transcription_regulat	DNA binding
11652	ZNF331	NM_018555.3	682	tgcgcgactagccatagacttt	45178	transcription_regulat	
11653	ZNF333	NM_032433.1	1929	gtgcggagagccctctaatgt	45222	transcription_regulat	DNA binding
11654	ZNF334	NM_018102.3	1262	aagaaatctatctctgtgtatca	45245	transcription_regulat	DNA binding
11655	ZNF335	NM_022095.3	1075	ggagagatagcgtctatctacc	45259	see also 8287 line	
11656	ZNF336	NM_022482.3	213	tgtctatagactatgtctact	45283	see also 8409 line	
11657	ZNF337	NM_015655.2	361	aggccctcttgaggaatgatg	45311	transcription_regulat	DNA binding
11658	ZNF339	NM_021220.2	752	cagtcattctctctacaaatgc	45351	transcription_regulat	
11659	ZNF341	NM_032819.3	918	aagacccgcgactaaactcgc	45364	transcription_regulat	DNA binding
11660	ZNF345	NM_003419.2	1768	tggagaggatctaggtttgaagc	45386	transcription_regulat	specific RNA polymerase II transcription factor
11661	ZNF347	NM_032584.1	2526	atgtaatcgttggagagttctcaa	45400	transcription_regulat	

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11662	ZNF354A	NM_005649.2	702	caagccaaagtcagctctatata	45408	-	transcription_regulat or	translation regulator	-
11663	ZNF366	NM_152825.1	579	gtcaaacctgagcttccaattct	45419	-	transcription_regulat or	translation_regulat or	-
11664	ZNF382	NM_022823.2	1738	tgaagaacacaggaattacgaata	45448	-	-	-	-
11665	ZNF384	NM_133476.2	534	aagctgctgttaaccagatatac	45451	-	transcription_regulat or	-	-
11666	ZNF398	NM_020781.2	1351	tgtctgagcagctgtttctatgc	45475	-	see also 7966 line	-	-
11667	ZNF408	NM_024741.1	955	agagccagcaatttccaagatgac	45492	-	transcription_regulat or	DNA binding	-
11668	ZNF409	NM_014894.1	2075	gtgcaagctcagacaacatctct	45511	-	-	-	-
11669	ZNF43	NM_003423.1	2467	ccgaacctcaaacctattgaac	45521	-	transcription_regulat or	DNA binding	-
11670	ZNF430	NM_025189.2	404	gaagcatgcgagtgatgataaac	45522	-	transcription_regulat or	-	-
11671	ZNF431	NM_133473.1	537	agagctcccaagctgaattgaagt	45524	-	transcription_regulat or	-	-
11672	ZNF432	NM_014850.1	1899	gtgaataagaggaactgaattgaata	45551	-	-	DNA binding	-
11673	ZNF433	NM_152602.1	1971	atgagctctgcgaactcaaatgc	45566	-	transcription_regulat or	-	-
11674	ZNF436	NM_030634.1	779	caagcatcgcgtatcatatagt	45576	-	transcription_regulat or	DNA binding	-
11675	ZNF44	NM_016264.1	1187	tgtgttagcagcaattcatgaag	45594	-	transcription_regulat or	-	-
11676	ZNF441	NM_152355.1	2210	tgtgatacttctttctabaac	45603	-	transcription_regulat or	-	-
11677	ZNF442	NM_030824.1	884	caagccagatattactgtgaatga	45606	-	transcription_regulat or	-	-
11678	ZNF450	NM_014797.1	1348	aagagccattccggtttcatctac	45632	-	see also 5992 line	-	-
11679	ZNF481	NM_020924.2	1025	gcgttgcatagcctgaagataaac	45676	-	see also 8031 line	-	-
11680	ZNF482	NM_006825.3	1217	caagtggagatcgccatcacaaat	45713	-	transcription_regulat or	-	-
11681	ZNF490	NM_020714.1	608	atgcatcaagctctcccttaataag	45718	-	transcription_regulat or	DNA binding	-
11682	ZNF510	NM_014530.1	1270	gaagcaaccattgagtaattgaata	45758	-	-	DNA binding	-
11683	ZNF6	NM_021988.2	1312	aaatcacacactgaagactcagt	45789	-	see also 8241 line	-	-
11684	ZNF7	NM_003416.1	2170	gtgtgctttcacactaatatatac	45877	-	transcription_regulat or	DNA binding	-
11685	ZNF71	NM_021216.3	521	ccgttaagaggtggagagaacttc	45883	-	transcription_regulat or	-	-
11686	ZNF74	NM_003493.1	1922	cagccggaggaagacttacaagt	45888	-	transcription_regulat or	RNA binding	-
11687	ZNF76	NM_003427.3	1185	ccggagctactgcgtctgttaag	45903	-	see also 2314 line	-	-

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11688	ZNF79	NM_007135.1	1606	ggatcaacaatcctaataaccac	45914	-	transcription_regulat or	molecular_function unknown	-
11689	ZNF8	NM_021089.1	717	ggagggagatatttataactaac	45918	-	transcription_regulat or	-	-
11690	ZNF84	NM_003428.1	1591	gagagagtcagatctcttaataca	45944	-	transcription_regulat or	zinc binding	-
11691	ZNF11	NM_006060.2	745	aggggacacctccgttgtaaacac	45959	-	transcription_regulat or	zinc binding	-
11692	ZNF112	NM_016260.1	812	agagagacctgcacacactatct	45974	-	transcription_regulat or	zinc binding	-
11693	Z186	NM_015871.2	237	gcgcagagactctcagctatcc	46003	-	transcription_regulat or	zinc binding	-
11694	ZXDA	NM_007156.1	2072	tggatggagtcctcagctgaat	46007	-	transcription_regulat or	molecular_function unknown	-
11695	BCAS2	NM_005872.1	289	ttgctcagctatcaaacatata	46018	-	transcription_regulat or	-	-
11696	C20orf14	NM_012469.2	954	aagctcacttcagcagattaaat	46049	-	transcription_regulat or	-	-
11697	DDX23	NM_004818.1	1053	aagctctgcacaaactctgtaaga	46086	-	transcription_regulat or	pre-mRNA splicing factor	-
11698	DHX38	NM_014003.2	2577	ttgacggcatcatgtttgtatc	46137	-	transcription_regulat or	pre-mRNA splicing factor	-
11699	DHX8	NM_004941.1	1995	aggtgagctcacacttcgatttt	46193	-	transcription_regulat or	pre-mRNA splicing factor	-
11700	FUSIP1	NM_054016.1	765	aagaacaactatagatcaaatct	46247	-	transcription_regulat or	pre-mRNA splicing factor	-
11701	HP-PRBP	NM_004814.1	266	caagattttacagcagctgattta	46254	-	transcription_regulat or	-	-
11702	KHSRP	NM_003885.1	1149	tggcgttgagatcacattcaagc	46285	-	transcription_regulat or	-	-
11703	LSM1	NM_014462.1	321	cagcactctgagcgcattatgt	46305	-	transcription_regulat or	pre-mRNA splicing factor	-
11704	LSM10	NM_032881.1	263	tggcccaaggagcagacabagcaat	46311	-	transcription_regulat or	pre-mRNA splicing factor	-
11705	LSM11	NM_017349.1	1015	caggtattactctcgcacctaa	46327	-	transcription_regulat or	pre-mRNA splicing factor	-
11706	LSM2	NM_021177.3	250	atgtctcgttggaactaaagat	46331	-	transcription_regulat or	pre-mRNA splicing factor	-
11707	LSM3	NM_014463.1	98	cagctcgttgagcagattatgt	46333	-	transcription_regulat or	pre-mRNA splicing factor	-
11708	LSM5	NM_012322.1	60	atgtataagatcaaaattacaa	46347	-	transcription_regulat or	pre-mRNA splicing factor	-
11709	LSM6	NM_007080.1	276	ccgaggaaacactctgttgaca	46353	-	transcription_regulat or	pre-mRNA splicing factor	-
11710	LSM7	NM_016199.1	240	gggcagctcctggtgtcaatct	46354	-	transcription_regulat or	pre-mRNA splicing factor	-
11711	LSM8	NM_016200.2	223	aagttgactatagatataaatt	46362	-	transcription_regulat or	pre-mRNA splicing factor	-
11712	MGC14157	NM_032356.3	624	gcgcagcttgagcgtctgataca	46366	-	transcription_regulat or	pre-mRNA splicing factor	-
11713	MPHOSPH 10	NM_005791.1	428	gatttctctcagcttaaga	46372	-	transcription_regulat or	-	-
11714	PP1G	NM_004792.1	654	ttccagagctagagctatcaat	46423	-	transcription_regulat or	-	-
11715	PRPF18	NM_003875.2	659	ttacatcttgagctcaagattg	46473	-	transcription_regulat or	-	-
11716	PRPF3	NM_004698.1	850	ggccacagagcctgacttgatgac	46499	-	transcription_regulat or	-	-

図4.6 (続き)

11717	PRPF4	NK_004897.3	1443	ttgcttactgtgctctatgtaa	46560	-	-	pre-mRNA splicing factor	-
11718	PRPF8	NK_006445.2	4650	tgtgtcccccacattatcagac	46556	-	see also 4507 line	-	-
11719	SCA2	NK_002973.1	3454	gagcaacagcttcgctatgac	46764	-	see also 2005 line	-	-
11720	SF3A1	NK_005877.3	857	ccagatgacgaagcccaattcc	46788	-	-	pre-mRNA splicing factor	-
11721	SF3A3	NK_006802.1	193	atgtaagatgtaattcagaag	46814	-	see also 4752 line	-	-
11722	SF3B1	NK_012403.1	1727	tgtcattgaacctgattgatt	46882	-	see also 5325 line	-	-
11723	SF3B4	NK_005850.3	295	aagccacatccggtgacaacagc	46894	-	-	pre-mRNA splicing factor	-
11724	SFRS1	NK_006724.3	309	tccgcagcgcgtgctatcagtg	46960	-	see also 4853 line	-	-
11725	SFRS10	NK_004993.1	769	tcgcctcgtggttactatgaca	47007	-	-	pre-mRNA splicing factor	-
11726	SFRS11	NK_004768.2	943	gagacgcggtcacattcttaagt	47028	-	-	pre-mRNA splicing factor	-
11727	SFRS21P	NK_004719.1	3322	ctgtcccaattggtatcacagaa	47091	-	-	-	-
11728	SFRS4	NK_005826.3	1541	tcgcctccctccatctgagtctag	47156	-	-	pre-mRNA splicing factor	-
11729	SFRS7	NK_006276.3	68	acggtatctcgaaggaagaacaaag	47159	-	-	pre-mRNA splicing factor	-
11730	SFRS9	NK_004592.2	1295	cgggaatcgacttactactact	47186	-	transcription regulat or	-	rheumatoid arthritis (関節リウマチ)
11731	SFRS9	NK_003769.2	586	tggagatgctgattatctctcaga	47226	-	-	pre-mRNA splicing factor	-
11732	SIP1	NK_003816.1	182	tctcgactctgaagaaagtttgg	47233	-	see also 2439 line	-	-
11733	SLU7	NK_006425.3	492	taagcaattgtaacccaattta	47262	-	-	-	-
11734	SMNDC1	NK_005871.2	799	aaagttgctactgttaagtttgg	47294	-	see also 4086 line	-	-
11735	SNRPP70	NK_003080.3	295	gcgccttaactcgaagatttga	47298	-	-	pre-mRNA splicing factor	-
11736	SNRPP8	NK_003091.3	411	agggaactctctcccaagatgact	47312	-	-	pre-mRNA splicing factor	-
11737	SNRPP2	NK_003092.3	850	ctgattaccctctcccaacttatt	47324	-	-	pre-mRNA splicing factor	-
11738	SNRPP1	NK_006938.2	294	ctggaacgctgattatctggag	47337	-	-	pre-mRNA splicing factor	-
11739	SNRPP2	NK_004597.4	431	ctctccacacataagaactcc	47342	-	-	pre-mRNA splicing factor	-
11740	SNRPP3	NK_004175.3	504	acgaacacgcttgattatctgc	47347	-	see also 2803 line	-	-
11741	SNRPF	NK_003095.1	307	aaggttaataattctcttata	47352	-	-	pre-mRNA splicing factor	-
11742	SNRPN	NK_003097.3	490	atctctgaacacataagctcagag	47354	-	-	-	Prader-Willi syndrome (プラダー・ウィーリ症候群、糖尿病)
11743	TPAZA	NK_013293.2	848	tggcagctcgtgagatttact	47390	-	see also 5398 line	-	-
11744	U2AF1	NK_006758.1	388	ggggaacgctgactcctaatttc	47406	-	-	pre-mRNA splicing factor	-

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11778	STRBP	NM_016387.2	2089	agcgcacgtccaaatagaagag	48866	-	see also 7432 line	-	-
11779	TARBP2	NM_004178.3	579	tcgagtcgaggtctattgaga	48881	-	transcription regulator	-	-
11780	Terr	NM_139243.1	269	cagcgcaagcagcaactcaca	48891	-	see also 9660 line	-	-
11781	TLR3	NM_003965.2	304	cgcgcacactcaaaagctatgc	48946	-	receptor activity, signal transduction	transmembrane receptor	-
11782	HNRPBH	NM_005520.1	656	atgctccacccagcagctctatg	49037	-	see also 3850 line	-	-
11783	AARS	NM_001605.1	165	aagagaaacagcagcactatgct	49045	-	-	-	-
11784	CARS	NM_001751.3	1415	atggcctcagcgcctcctaattata	49113	-	-	RNA binding	-
11785	FARS1	NM_006567.1	678	tcgctctcgcacataaacaagaga	49135	-	-	phenylalanine-tRNA ligase	-
11786	MARS	NM_004890.2	949	gtggacagatgattgtttgata	49168	-	-	tRNA binding	-
11787	SOYE1	NM_004751.1	305	ctgcagcaataatctatgctttc	49202	-	signal transduction	tRNA binding	-
11788	SLA/LP	NM_016955.1	188	tggtcaactgtgtgaagtctaact	49224	-	see also 6981 line	-	-
11789	YARS	NM_003980.2	1057	taggaactccagctgaatttactat	49262	-	apoptosis	tyrosine-tRNA ligase	-
11790	RPL5	NM_000969.2	223	gtgtgacaacacagagatactatt	49289	-	-	structural constituent of ribosome	-
11791	RPS11	NM_001015.3	257	atgcaccttactctgaaatgct	49291	-	-	structural constituent of ribosome	-
11792	EIF4EL3	NM_004646.1	24	aagtcagacgcttgaaagatga	49292	-	see also 3358 line	-	-
11793	EIF4G3	NM_003760.2	2332	aggcgcactctgttgaaatgtg	49334	-	see also 2373 line	-	-
11794	NCBP2	NM_007362.2	143	ctgcagctatctgttgaaatc	49430	-	-	RNA cap binding	-
11795	RNU11	NM_005701.2	369	atgcaataactatgaatctttct	49440	-	-	-	-
11796	RRP4	NM_014265.4	685	ttgctgtatgataagctatcttc	49467	-	see also 5592 line	-	-
11797	SRP19	NM_003135.1	370	caattccactactgaatgaact	49489	-	see also 2115 line	-	-
11798	PTBP1	NM_002819.3	1601	gcctctcnaaaggatccaagtc	49505	-	-	-	-
11799	A2BP1	NM_018723.2	1808	ccgcggtgcacccgtgtacaaca	49520	-	see also 7576 line	-	-
11800	ACF	NM_014576.2	585	gtgaaacttcgcgattattgtt	49551	-	-	-	-
11801	ACO1	NM_002197.1	2204	aggcctaactccacaggaattca	49635	-	see also 1400 line	-	-
11802	AD023	NM_020679.2	533	aggctgtatctaccctttatc	49657	-	-	-	-
11803	ADA11	NM_012091.2	127	caagatcagctatgaacactatg	49666	-	-	-	-
11804	AKAP1	NM_003488.2	2644	tgagcagcagcagataaagaga	49712	-	-	-	-
11805	ALK	NM_004304.3	4972	tgagcctgatacagcagataata	49753	-	see also 2882 line	-	-
11806	APOBEC1	NM_001844.2	95	tgaactattgcgctctttcttga	49765	-	-	-	-
11807	BAT1	NM_004640.3	842	aggctccatgcgctctatctgc	49785	-	-	-	-
11808	BRUNOL4	NM_020160.1	69	cgcgcagcagctctctctcttcac	49809	-	see also 3154 line	-	-
11809	C14orf21	NM_014913.1	493	atgcagagctctctctctctctca	49821	-	see also 7788 line	-	-
11810	C15orf12	NM_018285.1	544	tcgagcgcctgctatgatacaatg	49836	-	-	-	-
11811	C1orf25	NM_003034.3	848	atgtatgagcagcagatataaa	49864	-	-	-	Alzheimer disease (アルツハイマー病)
11812	CGI-37	NM_016101.2	414	ctctgattctcttgcaactatgc	49908	-	-	-	-

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11813	CGI-79	NM_016024.1	865	agccctgtatataagaatgaag	49320	-	-	RNA binding	-
11814	CHERP	NM_008367.4	2677	gcggagagctccagagatctctga	49341	-	-	-	-
11815	CHERP	NM_001280.1	485	cgagagctccagagatctctctga	49346	-	-	RNA binding	-
11816	CZL	NM_012127.1	2058	ccgtcttcacagccctctctctga	49362	-	-	cell cycle	-
11817	CPSE2	NM_017437.1	1931	ccgtcttcacagccctctctctga	49368	-	-	see also 7011 line	-
11818	CP-SF3	NM_016207.2	701	ccgcaacacgctccagagatctga	50057	-	-	RNA binding	-
11819	CP-SF5	NM_007006.1	193	cagcgctatgagagagagatctga	50105	-	-	-	-
11820	CP-SF6	NM_007007.1	1573	tatagagccgtctctacagatatt	50143	-	-	-	-
11821	CS1F1	NM_001324.1	1355	ctctgctgttggagcaacacat	50205	-	-	RNA binding	-
11822	CS1F2	NM_001325.1	1235	agagatccctggagagagagatgc	50228	-	-	see also 874 line	-
11823	CS1F3	NM_001326.1	1693	cgagcttactatagatagatgc	50288	-	-	see also 874 line	-
11824	CUGBP1	NM_005660.2	1233	tcggctctcagcaatactctgc	50327	-	-	see also 4598 line	-
11825	CUGBP2	NM_005661.1	208	cgagccgctcagcaatactctgc	50337	-	-	see also 4600 line	-
11826	DAZAP1	NM_018959.2	288	tggagagctgttagatgttctta	50362	-	-	see also 7608 line	-
11827	DAZL	NM_001351.2	902	atgtgttactccgctgactttct	50390	-	-	-	-
11828	DDX1	NM_004939.1	1066	aagcagcccgatgttactattct	50422	-	-	see also 3438 line	-
11829	DDX10	NM_004398.2	1381	cttgcacacgctgttactattct	50513	-	-	RNA helicase	-
11830	DDX17	NM_006386.3	2179	ggacttaccatattagatgattac	50587	-	-	phosphatase	-
11831	DDX18	NM_006773.3	1026	agccgctctctgaccatctatgc	50615	-	-	ATP dependent	-
11832	DDX19	NM_007242.3	163	ggagcaacttctctctctctctga	50656	-	-	RNA helicase	-
11833	DDX21	NM_004728.1	2112	atgctctctctctctctctctctga	50700	-	-	see also 3240 line	-
11834	DDX24	NM_020414.3	2275	atgctctctctctctctctctctga	50750	-	-	see also 7887 line	-
11835	DDX26	NM_012264.2	612	atgctctctctctctctctctctga	50758	-	-	see also 3382 line	-
11836	DDX41	NM_016292.2	415	atgctctctctctctctctctctga	50792	-	-	see also 9727 line	-
11837	DDX43	NM_018565.1	835	agagctctgagctctctctctctga	50820	-	-	-	-
11838	DDX5	NM_004396.2	882	agagctctgagctctctctctctga	50877	-	-	RNA helicase	-
11839	DDX56	NM_019082.1	465	gggagccctctctctctctctctga	50930	-	-	ATP dependent	-
11840	DDX6	NM_004397.3	1579	ggagctctctctctctctctctga	50984	-	-	RNA helicase	-
11841	DHX34	NM_014681.3	2359	agagagcagctctctctctctctga	51007	-	-	RNA binding	-
11842	DHS3	NM_014953.2	235	ctgcgcagctctctctctctctga	51016	-	-	ribonuclease	-
11843	DKO1	NM_001363.2	94	tgcagctctctctctctctctctga	51105	-	-	pseudouridylylase	-
11844	DSCR1L2	NM_013441.2	798	atgcagctctctctctctctctga	51156	-	-	RNA binding	-
11845	DUSP11	NM_003584.1	829	agagccttagtatctctctctctga	51177	-	-	prenylated protein	-
11846	EIF2S1	NM_004084.3	249	aagagctctctctctctctctctga	51189	-	-	tyrosine phosphatase	-
11847	EIF3S4	NM_003755.1	182	aggtctctctctctctctctctctga	51220	-	-	Nuclear respiratory factor-1	-
11848	EIF3S9	NM_003751.2	641	ggagctctctctctctctctctctga	51229	-	-	translation initiation factor	-

dyskeratosis congenita(先天性角化異常症)

11849	EIF4B	NM_001417.1	1449	ttgagctgaagcgaagcttaaac	51261	-	-	translation initiation factor
11850	EIF4G1	NM_004953.2	3115	cgtctcccacgactactaac	51298	-	-	translation initiation factor
11851	ERAL1	NM_005702.1	497	gaagcccaagctgactacttira	51425	-	-	translation initiation factor
11852	ETFL1	NM_004730.1	1043	ttgagcttgagatgactacttira	51474	-	see also 3242 line	RNA binding
11853	FBI	NM_001436.2	821	gcgtatctgagatgactcttga	51515	-	-	RNA binding
11854	FLJ10379	NM_018079.3	2674	cgtgctgctgctcccaagcaat	51601	-	-	-
11855	FLJ10581	NM_018146.2	377	ggagctgctgctgaagactatt	51614	-	see also 7281 line	-
11856	FLJ20244	NM_017722.2	607	caggctgaagctgctgactatt	51697	-	-	-
11857	FLJ22413	NM_024697.1	1157	aagctgaagctgctgactataa	51715	-	-	-
11858	FLJ25270	NM_152520.2	1251	cagctgacacgaagagttact	51740	-	-	-
11859	FLJ31121	NM_144723.1	590	tggtctccacgaagagttact	51757	-	see also 9744 line	-
11860	FXR1	NM_005087.1	1175	cagctgctgctgctgaagctaac	51807	-	see also 3550 line	-
11861	FXR2	NM_004860.2	585	ggagctgctgctgctgaagctaac	51833	-	see also 3377 line	-
11862	G3BP	NM_005754.2	1270	gttgagctgctgctgaagctaac	51873	-	signal transduction protein transporter	-
11863	G3BP2	NM_012297.2	1190	ttgagctgctgctgctgaagctaac	51892	-	see also 5284 line	-
11864	HDLBP	NM_005536.1	3096	ttgagctgctgctgctgaagctaac	51967	-	see also 3717 line	-
11865	HNRPA0	NM_006805.2	699	ttgagctgctgctgctgaagctaac	51990	-	-	RNA binding
11866	HNRPA2B	NM_002137.2	974	ggagctgctgctgctgaagctaac	52006	-	-	-
11867	HNRPA3	NM_004499.2	499	ggagctgctgctgctgaagctaac	52015	-	see also 3050 line	-
11868	HNRPF	NM_004966.2	1219	aagcagcagcgaagcgaagctaac	52047	-	-	RNA binding
11869	HNRPH2	NM_019597.2	192	tgacacatcagctgctgctaac	52055	-	-	RNA binding
11870	HNRPH3	NM_012207.1	443	cagcagcagcgaagcgaagctaac	52065	-	-	RNA binding
11871	HNRPL	NM_001533.1	1120	cggttccagctgctgctgctaac	52107	-	-	-
11872	HNRPM	NM_005968.2	2391	agagctgctgctgctgctgctaac	52135	-	see also 4169 line	RNA binding
11873	HNRPR	NM_005626.2	907	ttgagctgctgctgctgctgctaac	52163	-	see also 4062 line	-
11874	ILF2	NM_004515.2	859	cagctgctgctgctgctgctgctaac	52201	-	transcription regulator	-
11875	IMP-3	NM_006547.2	1126	ttgtgagctgctgctgctgctgctaac	52242	-	see also 4568 line	-
11876	RHDRE3	NM_006596.1	1027	cagctgctgctgctgctgctgctaac	52264	-	see also 4595 line	-
11877	KIAA00116	NM_015004.2	531	ggagctgctgctgctgctgctgctaac	52283	-	-	3'-5' exonuclease
11878	KIAA00117	NM_015014.1	139	cagctgctgctgctgctgctgctaac	52287	-	-	-
11879	KIAA00427	NM_014772.1	1517	ggagctgctgctgctgctgctgctaac	52309	-	-	RNA binding
11880	KIAA0682	NM_014852.1	1551	ttgagctgctgctgctgctgctgctaac	52322	-	see also 0053 line	-
11881	LGTN	NM_006893.1	1355	cagctgctgctgctgctgctgctgctaac	52388	-	-	translation initiation factor
11882	LOC91801	NM_138775.1	206	agagctgctgctgctgctgctgctgctaac	52402	-	-	-
11883	MBNL1	NM_021038.1	1498	acgctgctgctgctgctgctgctgctaac	52457	-	see also 8071 line	-
11884	MCT51	NM_014060.1	412	tggtctgctgctgctgctgctgctgctaac	52487	-	see also 5475 line	-
11885	MEI1L3	NM_019652.2	816	cagctgctgctgctgctgctgctgctaac	52505	-	see also 7738 line	-
11886	MGC42174	NM_152383.2	1043	gttgagctgctgctgctgctgctgctgctaac	52561	-	see also 9842 line	-
11887	MGC4562	NM_133375.2	754	aagctgctgctgctgctgctgctgctgctaac	52581	-	-	-

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11888	MOV10L1	NM_018985.1	2520	cgagcttgagagcagctatcttg	52711	-	-	hydrolase	-
11889	MRPL1	NM_020236.2	712	agcgcgaactcactcagatg	52739	-	-	structural constituent of ribosome	-
11890	MRPL12	NM_002949.2	493	tacgagaagacagcacacttc	52748	-	-	structural constituent of ribosome	-
11891	MRPL23	NM_021134.2	108	gggctctcagcaccactcttc	52751	-	-	structural constituent of ribosome	-
11892	MRPL3	NM_007208.2	1184	ctggcgccctctcttaactcttg	52783	-	-	structural constituent of ribosome	-
11893	MRPS28	NM_014018.2	438	agggtccggtctcgcctattaga	52793	-	-	structural constituent of ribosome	-
11894	NHP2L1	NM_005008.1	99	ctggagctcgtatgaatccaag	52816	-	-	cell cycle	-
11895	NOL4	NM_003787.1	1957	atggagcactatgtaacctagt	52848	-	-	-	-
11896	NOL5A	NM_006392.2	1210	ctggagctccacagactcctc	52884	-	-	see also 4485 line	-
11897	NOPD1	NM_182543.1	1530	tggacactcactcactaacacttg	52922	-	-	-	-
11898	NOVA1	NM_002515.1	231	tacttatgctcgtgactctctaa	52930	-	-	-	-
11899	NUFIP1	NM_012345.1	835	aaggaggaatcagacactcaca	52985	-	-	transcription, regulat	-
11900	NXF2	NM_017809.2	894	ggagagctcttcacgggaattt	53028	-	-	or	-
11901	NXF3	NM_022062.1	319	agggcaaacaccctgttaacatg	53069	-	-	-	-
11902	OAS1	NM_002534.1	888	tcggagctcgtggaactatgca	53084	-	-	-	-
11903	OAS2	NM_002535.1	1530	caaggactcactgactctctaaa	53092	-	-	-	-
11904	OAS3	NM_006187.1	427	ccgctcgtacatccgtgatcttg	53105	-	-	nucleotide transferase	-
11905	OP2	NM_181503.1	133	ctgcaactcctggtcactagt	53129	-	-	see also 10233 line	-
11906	PABPC5	NM_008032.1	723	cgacgaagctgaccttaagaaa	53168	-	-	see also 9528 line	-
11907	PABPN1	NM_004843.1	1841	ggactgaagctcactctactgg	53188	-	-	see also 3163 line	-
11908	PAPOLA	NM_032832.2	309	ggagctgactcgtcactctacca	53199	-	-	see also 9284 line	-
11909	PAPOLB	NM_020144.3	1941	cgaggcttccatttaacgaagt	53259	-	-	polynucleotide adenylyltransferase	-
11910	PAPOLG	NM_022894.2	2054	ccgtgatagacgaagtctcatt	53333	-	-	see also 8496 line	-
11911	PMSCL1	NM_005033.1	1244	agggctggttgctgaactctaca	53364	-	-	see also 3518 line	-
11912	PMSCL2	NM_002685.1	310	atggtctgcgaacactctaatg	53378	-	-	see also 1748 line	-
11913	PNP1T1	NM_033109.2	2040	cgatctataccgcacactaact	53468	-	-	-	-
11914	POLR2G	NM_002696.1	586	tgcctctcgtatggagactact	53520	-	-	-	-
11915	POP4	NM_006627.1	639	atgaacgctctggaagatttc	53540	-	-	RNA binding	-
11916	PPIE	NM_006112.1	480	caatgctctcctctcttaact	53553	-	-	ribonuclease P	-
11917	PPPIR8	NM_002713.2	1058	ggcagcgcctccagcaactcttg	53556	-	-	see also 9248 line	-
11918	PSID	NM_016505.2	302	agcctccctgagatgagatgt	53582	-	-	phosphatase	-
11919	PSMA1	NM_002786.2	482	cgatataccacacacagctatgg	53616	-	-	see also 1814 line	-

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11920	PSMA6	NM_002791.1	209	caggctgccttaacatgtagc	53636	-	-	proteasome endopeptidase	-
11921	PUM1	NM_014676.1	384	gagctgtctatctcttgaaga	53639	-	see also 3858 line	-	-
11922	PUM2	NM_015317.1	908	aagatgagcttcactatcttcc	53622	-	see also 6328 line	-	-
11923	RAE1	NM_003610.2	635	tgagatctcctctctgaactcc	53644	-	see also 2422 line	-	-
11924	RALY	NM_007367.2	413	ggagacattctctctgaatgag	53676	-	-	-	-
11925	RBM10	NM_005676.3	2103	atgagacattctctctgaatgag	53692	-	see also 3943 line	-	-
11926	RBM11	NM_005676.3	2103	atgagacattctctctgaatgag	53692	-	-	RNA binding	-
11927	RBM15	NM_022768.3	2117	ctgtgacacacacacacacacac	53658	-	-	RNA binding	-
11928	RBM16	NM_014892.1	1366	tgagatgctctctctctctctct	54000	-	see also 8078 line	-	leukemia(白血病)
11929	RBN3	NM_008743.2	92	tgagatgctctctctctctctct	54084	-	-	RNA binding	-
11930	RBM7	NM_016060.2	675	atgagctctgacatctctctctga	54085	-	see also 6657 line	-	-
11931	RBM9	NM_014309.1	1210	tgagctcttgagcagctctctct	54101	-	transcription regulat or,	RNA binding	-
11932	RBMS2	NM_002898.1	1203	cagagctctgagcagctctctct	54113	-	-	-	-
11933	RBMS3	NM_014483.1	1780	ttgggcacacacagagcagctat	54137	-	see also 5701 line	-	-
11934	RBPM5	NM_006867.1	708	aagctctctgagctctctctctat	54145	-	-	RNA binding	-
11935	ROBP	NM_002904.4	433	ccgtctcagagagagcatatctgc	54153	-	transcription regulat or	RNA binding	-
11936	RENT1	NM_002911.2	331	gagctcagcagctctctctctct	54159	-	see also 1941 line	-	-
11937	RNA5E1	NM_002833.3	250	cagcagctctcactctctctctac	54203	-	-	pancreatic	-
11938	RNA5H1	NM_002836.3	417	aagcagcagcagctctctctctac	54206	-	-	ribonuclease	-
11939	RNA5H2	NM_006397.2	800	aagcagcagcagcagctctctct	54217	-	-	ribonuclease H1	-
11940	RNA5L	NM_021133.2	2058	aagcagcagcagcagctctctct	54258	-	-	ribonuclease H	-
11941	RNA5E7	NM_003730.3	987	cagcagcagctctctctctctct	54276	-	-	kinase related	prostate cancer(前立腺癌)
11942	RNA5T	NM_003799.1	1553	ttgggaacctctctctctctctct	54308	-	-	endonuclease	-
11943	RNP1	NM_017495.4	665	tgcctctctctctctctctctct	54310	-	-	-	-
11944	RNP2	NM_004902.2	467	aagctctctctctctctctctct	54315	-	see also 3405 line	-	-
11945	RPL18	NM_000979.2	108	ggagctctctctctctctctctct	54398	-	-	structural constituent of ribosome	-
11946	RPL37A	NM_000998.2	36	atggcacaacacacacacacacac	54403	-	-	structural constituent of ribosome	-
11947	RPL38	NM_000999.2	214	tatgtgacacacacacacacac	54408	-	-	structural constituent of ribosome	-
11948	RPL3L	NM_005061.2	267	gagcagctctctctctctctctct	54407	-	-	structural constituent of ribosome	-
11949	RPL4	NM_000968.2	691	atgagctctctctctctctctct	54416	-	-	structural constituent of ribosome	-

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11950	RPL3	NM_000973.2	220	ggatgcctactctgctttagaag	54419	-	-
11951	RPN1	NM_002950.2	1524	ttacgagacacgtctaatggtac	54454	dolichyl- diphospho- oligosaccharide- protein	-
11952	RPI14	NM_007042.1	330	aggttgatgcgcctactcttg	54462	ribonuclease P	-
11953	RPS21	NM_001024.2	275	ccgagtcgcatgctctcaagaac	54475	structural constituent of ribosome	-
11954	RPS29	NM_001032.2	159	ccctctacatctacgaggaatctg	54481	zinc binding	-
11955	RPS3	NM_001005.2	150	cagcgacagaaactaatctctag	54483	structural constituent of ribosome	-
11956	RPS4Y	NM_001008.2	504	agagcatgcgaagatgaatcaact	54486	structural constituent of ribosome	-
11957	RPS4Y2	NM_139563.1	612	ttgcgtatgtgtacatctgaag	54492	-	-
11958	RPS5	NM_001009.2	256	ttctggagcgcctcaactctc	54494	structural constituent of ribosome	-
11959	RPS9	NM_001013.2	328	gggcctcaagaatacgaagcttct	54498	structural constituent of ribosome	-
11960	RRP40	NM_018042.1	578	gtctctctgtgctcttaattgaaa	54512	3'-5'	-
11961	RRP41	NM_018037.1	407	caagctccgccagactcttcgaagc	54520	3'-5'	-
11962	RRP46	NM_020158.1	255	ctgtatcctcggcgcgaagatttg	54531	exoribonuclease	-
11963	RTOD1	NM_003729.1	1204	aagcagcgcgcataaagatcaact	54568	structural constituent of ribosome	-
11964	SARS	NM_006513.2	423	ctctctcgcgcgcgcagatgaat	54582	RNA-3'-phosphate cyclase	-
11965	SBP2	NM_024077.2	899	ctctcatctgcgcctaccactctct	54611	structural constituent of ribosome	-
11966	SCA1	NM_000332.1	2809	agagcagcgcgcgcctacatctg	54660	see also 281 line	-
11967	SFI1	NM_004630.1	1115	agagctgctgctctctaaatgg	54687	see also 3145 line	-
11968	SFA2	NM_007168.3	217	agagcctactctctgaagac	54695	RNA binding	-
11969	SFA6	NM_021164.2	55	ttggctgtcttcctccctaaact	54702	-	-
11970	SFRS14	NM_014884.1	788	caagctcagctcctcaactctg	54733	-	-
11971	SFRS3	NM_003017.3	288	gagcttgatctgaagacacatcag	54782	-	-
11972	SKIV2L	NM_008929.3	1797	ctgaactctctgactatgct	54806	RNA binding	-
11973	SNRPA	NM_004596.3	797	aagcgcctcagatcatctgc	54836	see also 4860 line	-
11974	SNRPA	NM_004596.3	797	aagcgcctcagatcatctgc	54836	RNA binding	-

11974	SNRP21	NM_003090.1	669	aagaaatgcagatgcacaaatcttc	54844	-	see also 2000 line
11975	SPR54	NM_003136.2	1550	atgttcagcagctgcctgaaagatg	54881	-	see also 2118 line
11976	SPR58	NM_014230.2	1531	atgcgcagcctctcctcaagcagc	54924	-	see also 3548 line
11977	SUP3.1	NM_003171.2	874	tgttcagcagcagcagcagcagc	55025	-	see also 2149 line
11978	SUP-F6	NM_006753.3	863	cagcagcagcagcagcagcagc	55047	-	RNA binding
11979	SYNCRP	NM_006372.3	1427	aggcagcagcagcagcagcagc	55074	-	see also 4463 line
11980	SYNU1	NM_003895.1	359	ctgcagcagcagcagcagcagc	55090	-	inositol-1, 4, 5-trisphosphate 5-phosphatase
11981	SYNU2	NM_003898.1	2434	ttgcctcagcagcagcagcagc	55255	-	phosphatase
11982	TARBP1	NM_005646.2	3230	ctgtgtttagcagcagcagcagc	55336	-	transcription regulat
11983	TEP1	NM_007110.3	7421	tatgtaggacccatatactagaa	55502	-	or
11984	TRNT1	NM_016000.2	341	tggatctgcagcagcagcagcagc	55523	-	see also 4953 line
11985	TTIC14	NM_133462.1	698	tgcacatctctctatagctct	55578	-	see also 6602 line
11986	WBP4	NM_015542.2	1216	cagcagcagcagcagcagcagc	55646	-	see also 9581 line
11987	WBP2	NM_007187.3	182	tatgcctatcttcaattctcagc	55728	-	-
11988	WIG1	NM_022270.2	540	atgtatgaagaactcagcagcagc	55759	-	see also 4968 line
11989	XRN2	NM_012255.2	1679	agcaaatctctcagcagcagcagc	55923	-	see also 9331 line
11990	ZNF318	NM_014345.1	3424	aagcagcagcagcagcagcagc	55988	-	see also 3224 line
11991	ZPR9	NM_033414.2	122	tgcagcagcagcagcagcagc	56077	-	see also 5650 line
11992	BRF2	NM_018310.2	460	tatgtctgtctgtctgtctgtct	56108	-	see also 3422 line
11993	BZW1	NM_014870.1	949	cagcagcagcagcagcagcagc	56136	-	-
11994	BZW2	NM_014593.1	402	tgcagcagcagcagcagcagcagc	56141	-	see also 5848 line
11995	CGI-49	NM_015939.3	388	aagcagcagcagcagcagcagc	56160	-	-
11996	COP-S3	NM_006837.2	726	atgcagcagcagcagcagcagc	56199	-	see also 4791 line
11997	COP-S6	NM_006833.4	772	ggcagcagcagcagcagcagc	56235	-	see also 4788 line
11998	EIF1AY	NM_004681.2	321	atgcctatcagcagcagcagcagc	56250	-	translation
11999	EIF2A	NM_002025.1	107	aagcagcagcagcagcagcagc	56253	-	initiation factor
12000	EIF2B1	NM_001414.1	437	ggcagcagcagcagcagcagc	56311	-	see also 877 line
12001	EIF2B2	NM_014239.1	163	aggcttgcgcgcagcagcagc	56321	-	translation
12002	EIF2B3	NM_020395.1	664	caggaagcagcagcagcagcagc	56349	-	translation
12003	EIF2B4	NM_015636.2	1292	ttgcctcagcagcagcagcagc	56379	-	translation
12004	EIF2B5	NM_003307.1	1961	ggcagcagcagcagcagcagc	56431	-	initiation factor
12005	EIF2C1	NM_012199.2	1039	aagcagcagcagcagcagcagc	56442	-	see also 8525 line
12006	EIF2C2	NM_012154.2	464	ggcagcagcagcagcagcagc	56475	-	translation
12007	EIF3S1	NM_003758.1	778	ctgcagcagcagcagcagcagc	56506	-	initiation factor
12008	EIF3S10	NM_003750.1	1167	cagcagcagcagcagcagcagc	56547	-	translation

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12009	EIF3S2	NM_003757.1	934	atgattacgcgcgtctccattac	56637	-	-	translation initiation factor	-
12010	EIF3S3	NM_003756.1	601	aagaagctgcgcatttgatbaaa	56655	-	-	translation initiation factor	-
12011	EIF3S6	NM_001588.1	24	tgctggagagcagcttactact	56664	-	-	translation initiation factor	breast cancer(乳癌)
12012	EIF3S6P	NM_016091.1	34	tatcttctccctcgttgctta	56710	-	see also 8658 line	-	-
12013	EIF3S7	NM_003753.2	643	ctgcctccacagcgatggaatg	56734	-	-	translation initiation factor	-
12014	EIF3S8	NM_003752.2	417	ctgacctgaagactctctaat	56770	-	see also 2568 line	-	-
12015	EIF4BP2	NM_004096.3	411	ctgttgatcgtgcgaattctcc	56789	-	-	-	-
12016	EIF5	NM_001989.3	1158	aagcctcgtatgattgaataca	56831	-	see also 1247 line	-	-
12017	EIF5A2	NM_020390.5	346	ttgtctctactacgaacatg	56839	-	see also 7882 line	-	-
12018	FLJ120288	NM_024688.1	1252	ttggtatgtgtctgtcttact	378012	-	-	-	-
12019	GC20	NM_005875.1	383	caagcattcgcagctgtattga	56856	-	-	translation initiation factor	-
12020	IF2	NM_015904.2	1981	tggaacacgcgaactgaacatg	56887	-	-	translation initiation factor	-
12021	ITGB4BP	NM_002212.2	188	ttgtcagatctccgataccatcc	56943	-	-	-	-
12022	KIAA0864	NM_015229.2	884	ctgaatcagtcacacattatca	56951	-	-	translation initiation factor	-
12023	LAMA5	NM_005560.3	9590	ttgtccacagcgcgtcttgatc	56983	-	-	structural molecule	-
12024	LRG2	NM_014813.1	2325	ttgtgaacatcggtgtctactgt	57039	-	-	-	-
12025	MIFAS1	NM_004225.1	1305	acgcctcctctgtgacaaatgc	57078	-	signal transduction	-	osteosarcoma(骨腫性骨肉腫)
12026	MGC11102	NM_032325.2	692	ggaggtcgcagctcagaatga	57100	-	-	-	-
12027	MGC3207	NM_032285.1	789	cgcgaagagctcatttttaag	57105	-	-	structural constituent of ribosome	-
12028	MRPL49	NM_004927.2	352	acgtctcgtgtgcacaacatcc	57112	-	-	-	-
12029	MTIF2	NM_002453.1	301	ttgtcagattttcacactatta	57115	-	-	translation initiation factor	-
12030	MTIF3	NM_052912.3	382	ttgtcacagattattactactat	57183	-	-	-	-
12031	PSMD7	NM_002811.3	471	ctgtctcaattctcgtattatca	57203	-	see also 1828 line	transcription regulat	-
12032	RRN3	NM_018427.2	1054	tcgcgaactgataaaccttttg	57219	-	or	-	-
12033	EEF1A2	NM_001958.2	1464	ttgcctctatgctctcaagaac	57228	-	-	translation elongation factor	-
12034	EEF2	NM_001961.2	744	aagcaattttccagatgatact	57239	-	-	translation elongation factor	-
12035	EEF3	NM_024906.5	1948	ttgtcacacagctgtgtctct	57301	-	see also 8630 line	-	-
12036	EEF2	NM_032380.3	575	ttgtctctctcgtatctatcag	57326	-	see also 9178 line	-	-
12037	ELI3	NM_023165.1	240	aagccacacagaggtgtactaga	57397	-	-	-	-
12038	FLJ13119	NM_024590.3	2058	cagatgctcgtgtgacttaaa	57456	-	see also 8648 line	-	-
12039	FLJ13220	NM_021927.1	1527	ctgaacaattccctccgaataca	57506	-	see also 8199 line	-	-

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12040	GSPT1	NM_002084.1	1522	cgagcctcattgagatgacttga	57534	-	-	translation elongation factor	-
12041	GSPT2	NM_016984.1	1734	tggctcagctgttgcattctcaga	57548	-	-	-	-
12042	GTPB2	NM_019066.2	1012	ttgctgcagccacacagctcaco	57590	-	-	-	-
12043	HBS1L	NM_006620.2	1830	cgagcagatcattgagcttact	57647	-	-	see also 4650 line	-
12044	HTATSF1	NM_0145900.3	409	acgctgagcgtcttgctcttacc	57674	-	-	transcription regulat or	-
12045	SELB	NM_0071937.2	1222	cgagctgagtcggagacttcaca	57735	-	-	protein-synthesizing	-
12046	SUPT16H	NM_0071932.2	1998	aggtctctggcagcacttactta	57764	-	-	see also 4890 line	-
12047	TUFM	NM_003321.3	388	atgcagctatttgatgattgagc	57803	-	-	see also 2253 line	-
12048	FLJ38863	NM_132269.1	646	ggacacagctggtttatttcatt	57820	-	-	-	-
12049	IC1T1	NM_001545.1	223	tgtgtgtcttgacatctcttat	57837	-	-	translation release factor	-
12050	MTRF1	NM_004294.2	932	aggaacagatgtcgtattatctcc	57862	-	-	translation release factor	-
12051	ABCF1	NM_001090.1	2423	cgaggtgttgcacaaatgatgag	57906	-	-	-	-
12052	EEF2K	NM_013302.2	2715	caagcagcagctagcagagcttact	57908	-	-	translation factor, kinase related	-
12053	PEIT112L	NM_004564.1	1610	tgtgtcggaaagctgctcacaagc	57963	-	-	see also 3103 line	-
12054	AF020591	NM_014480.1	904	gggtcttctctgcagagattctac	57971	-	-	transcription regulat or	-
12055	AFG3L2	NM_006798.1	222	cgagcgtcttaccagatttttuc	57988	-	-	metalloendopeptida se	-
12056	ARH2	NM_006321.1	389	ctgtctcaagtgatctctatctaa	58047	-	-	zinc binding	-
12057	ASK	NM_006716.2	1277	cgatcacaagtgtgtggtat	58078	-	-	see also 4734 line	-
12058	BANK1	NM_017935.2	1276	gggttcagcccccgcctctattg	58119	-	-	-	-
12059	BA1A	NM_033177.2	1183	ggctctcaagctcgtctgaagaagc	58153	-	-	-	-
12060	BGG29	NM_015144.1	2707	tgtgtggcagagcaattgtctcc	58187	-	-	-	-
12061	BOLL	NM_033030.3	651	tgggtgtctctcgtctgtatata	58203	-	-	see also 9351 line	-
12062	BRUNOL6	NM_052840.2	1000	gggtctgcgcagctctctacata	58224	-	-	see also 9434 line	-
12063	C13orf10	NM_022118.3	849	gtgacacataactctctctctgaag	58257	-	-	see also 8282 line	-
12064	C14orf114	NM_018198.1	569	gtgtgcacctccattcttgaaag	58314	-	-	see also 7314 line	-
12065	C14orf6	NM_145250.1	613	aggttccaatacacttgattttaa	58341	-	-	-	-
12066	C20orf89	NM_033089.4	1008	cgacccaagaactctttaatzg	58347	-	-	transcription regulat or	-
12067	C21orf107	NM_018963.3	3797	aaagagctctcgtgatttgg	58476	-	-	see also 7610 line	-
12068	CGI-18	NM_015947.1	768	ccgcaacacggatttgattcttt	58580	-	-	transcription regulat or	-
12069	CGI-72	NM_016018.3	1147	ggagcttcagatccacagatata	58626	-	-	-	RNA binding
12070	CNOT4	NM_013316.1	1722	cgagcagcagcgttattatctc	58683	-	-	see also 5396 line	-
12071	COL4A3	NM_000091.2	3842	aggtctgcgcgttccaattacc	58723	-	-	apoptosis, signal transduction	-
						-	-	Alport syndrome(アルポート症候群), Goodpasture syndrome(グッドパスター症候群), hematuria(無症候性血尿)	-

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1202	ICV41	NM_006375.2	1175	ccgtctatgacgaataaactctct	58759	-	see also 4465 line
1203	CP2B1	NM_006394.2	1547	ctggttatgacgcgaagtaact	58808	-	see also 8893 line
1204	CP2B3	NM_014912.1	1351	gaatgagacgtctctagaag	58843	-	see also 6065 line
1205	CP2B4	NM_006827.1	1753	aagtgctctcaactatctat	58872	-	see also 8910 line
1206	CP2F4	NM_006893.1	609	agctaacatccgcattaca	58905	-	see also 4726 line
1207	CS1P2T	NM_015235.1	359	ctggaagccattatgactca	58910	-	-
1208	DARS	NM_001349.1	1503	tggattgacgaactatctac	58959	-	see also 896 line
1209	DC50	NM_031210.3	49	cggctctgctgaattatcaat	58962	-	-
12080	DDX26	NM_012141.1	2710	tgaacagcaacaatcalatg	59037	-	see also 5148 line
12081	DDX31	NM_022779.7	1440	acgcagctactatctatggtt	59077	-	-
12082	DDX39	NM_005804.2	621	agcagctactgcaatgagac	59105	-	-
12083	DDX4	NM_019039.1	407	agcagctactgcaatgagac	59127	-	-
12084	DDX42	NM_007372.1	1381	atgtgcaagacatgtaac	59225	-	see also 7670 line
12085	DDX46	NM_014829.1	1799	ctgtctgaagcagctatggtt	59254	-	see also 5095 line
12086	DDX47	NM_016355.2	560	aaagcagcagacatgataag	59284	-	see also 8032 line
12087	DDX49	NM_019070.3	88	tgagctctggagcaatctg	59362	-	see also 8838 line
12088	DDX51	NM_175066.2	1527	aaagctctctgctctcaact	59429	-	-
12089	DDX52	NM_007010.2	39	atggagctcaagctctctg	59430	-	see also 4880 line
12090	DDX53	NM_132699.1	1298	caagcagcagcagctatgaca	59488	-	-
12091	DDX54	NM_024072.2	336	ctgagctaccgcggttcaag	59534	-	-
12092	DX15	NM_007358.1	913	tgaagcttatgcttaataat	59559	-	see also 911 line
12093	DX116	NM_003587.3	416	aaagacagctatctagttact	59620	-	see also 2380 line
12094	DX129	NM_019030.1	3507	ctgagcgtcaatgcatctct	59735	-	-
12095	DXH35	NM_021831.2	495	atgttgatcgttttttcaaaa	59799	-	-
12096	DXH36	NM_020865.1	2380	taggcgctgttttcagatagc	59930	-	nucleic acid binding
12097	DXH37	NM_032656.2	2779	caagtcagacacgaatcaagc	59975	-	see also 8005 line
12098	DXH40	NM_024612.3	2010	atgtcttgctgcagctattca	59992	-	-
12099	DIAPH3	NM_030932.2	1913	atctctaaaccttgagtttaac	60055	-	see also 8967 line
12100	DKFZP434	NM_032143.1	242	aaagatgatacatgttatgaaa	60079	-	-
12101	DKFZP434	NM_031284.3	916	tagagctgcagctatactaac	60152	-	see also 9002 line
12102	DKFZP434	NM_015496.3	806	aaagatgatacgcgaacagtaga	60182	-	-
12103	DKFZP547	NM_152608.2	2099	tatgagctagacctaagatgac	60347	-	transcription, regulat or
12104	B1023	NM_031306.1	935	ctgttatatgctgcttttatto	60371	-	see also 9009 line
12105	DKFZP161	NM_032280.1	3680	ccagctcttggaattctcttt	60422	-	-
12106	DKFZP162	NM_152411.1	182	gaagactctgctctctatgaga	60432	-	transcription, regulat or
12107	DN01	NM_194249.1	298	acaggttccctctgattgacc	60451	-	-
12108	DRB1	NM_152945.1	610	ttagctctctagctactaaa	60461	-	see also 9367 line

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12108	EGGP	NM_018025.2	1856	cgatcagacagctctatgac	60515	-	-	-
12109	EH02	NM_014601.2	1073	cgagtttcacgttcaatcatca	60538	-	-	nucleic acid binding
12110	EH02	NM_014601.2	825	cgagtttcacgttcaatcatca	60540	-	-	nucleic acid binding
12111	EH03	NM_014600.1	825	cgagtttcacgttcaatcatca	60547	-	-	endonuclease
12112	ENDOGL1	NM_006107.1	242	cgagagagagagctacacaaat	60570	-	-	-
12113	ENPPI	NM_006208.1	243	aagtaatactctatctatctatga	60570	-	-	see also 4303 line
12114	ENPPI	NM_006209.2	470	gatttcagatttcagatttcagatt	60580	-	-	see also 4304 line
12115	ENPPI	NM_005029.1	1261	cgagcttcacgagctatataatc	60768	-	-	phosphatase
12116	FAM12A	NM_006663.3	329	aagggagagcagcagatagagaa	60818	-	-	-
12117	FAM12B	NM_022360.2	276	tgatgcttcgcgaatcatcatc	60836	-	-	molecular function
12118	FLJ10094	NM_017993.1	700	tgatttcctcagagatcaacaaa	60854	-	-	see also 7191 line
12119	FLJ10252	NM_018040.1	250	cgagatcatcttcgaattatcatc	60889	-	-	-
12120	FLJ10260	NM_018047.1	254	tgagatctgcagatctctttcaaaa	60931	-	-	-
12121	FLJ10377	NM_018077.1	676	tgagatctgcagagagagaaat	60973	-	-	see also 7234 line
12122	FLJ10486	NM_018109.2	556	agagctatgcagctcaatacaatg	61014	-	-	see also 7257 line
12123	FLJ10634	NM_018163.1	374	cagagctatgcagagcagatgagc	61058	-	-	-
12124	FLJ101018	NM_018307.2	417	cgagatctgcagctatctctcttgc	61072	-	-	see also 7373 line
12125	FLJ11126	NM_018332.3	118	ctctcaatctgcagatcaacaattg	61096	-	-	-
12126	FLJ11142	NM_018338.2	1602	ggatcacccagatgattcaacttc	61144	-	-	-
12127	FLJ11175	NM_018349.1	353	gtcaagatctgcagctatcaaca	61183	-	-	-
12128	FLJ11637	NM_024967.1	493	ctctgcacagatgttgcactgac	61220	-	-	transcription_regulat
12129	FLJ11806	NM_024824.2	1611	cagacacagatctgttcaacaac	61290	-	-	or
12130	FLJ12455	NM_022078.1	91	gtttcttcctgcagcaatttcg	61314	-	-	-
12131	FLJ12659	NM_024811.2	398	caagttatgcctctctatgaggt	61339	-	-	see also 8750 line
12132	FLJ12806	NM_024804.1	1482	gtctatgactactgcctctaatc	61382	-	-	transcription_regulat
12133	FLJ12844	NM_023074.2	1253	cagaaagggcaatctcaacalaca	61375	-	-	transcription_regulat
12134	FLJ12998	NM_022784.1	491	agagctacgcagctctggagatg	61408	-	-	or
12135	FLJ13590	NM_024840.2	1002	aattctgcctctctatctatctca	61424	-	-	transcription_regulat
12136	FLJ14451	NM_032786.1	738	agagcagcagctgctctctatg	61444	-	-	or
12137	FLJ14779	NM_032838.2	207	tgattttcaatggagctcttatt	61457	-	-	transcription_regulat
12138	FLJ20035	NM_017631.3	506	cagatatacgtgttttcaacttc	61475	-	-	or
12139	FLJ20070	NM_017652.1	809	aattcctctctttataatcatg	61571	-	-	transcription_regulat
12140	FLJ20171	NM_017697.1	976	gattttacacagatattctgctac	61598	-	-	or
12141	FLJ20249	NM_015590.2	295	agagcagatgattatcagatag	61604	-	-	-
12142	FLJ20273	NM_019027.1	372	cagctatgcctctctatgctact	61614	-	-	-
12143	FLJ20344	NM_017776.1	566	aagcagcaagatccctcaaatatt	61628	-	-	transcription_regulat
12144	FLJ20433	NM_017820.2	1951	gagagcagctgcccctcaatttc	61628	-	-	or

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12145	FLJ20557	NM_017879.1	561	tggacgctctgctgcttccacc	61638	transcription_regulat	-
12146	FLJ21839	NM_021831.3	1429	agagctgctctgcttctctct	61663	or	-
12147	FLJ21918	NM_024893.1	1415	agctctgagctctgcttctct	61669	see also 8182 line	-
12148	FLJ21977	NM_032213.3	800	agctctgagctctgcttctct	61717	apoptosis	-
12149	FLJ27347	NM_029830.1	1198	cgagctgctctctgcttctct	61729	-	-
12150	FLJ27359	NM_029828.3	1245	cgagctgagctctgcttctct	61762	see also 8810 line	-
12151	FLJ32811	NM_032226.1	979	tggacgctctgcttctctaac	61778	see also 9123 line	-
12152	FLJ32933	NM_024691.2	536	tggacgctctgcttctctaac	61792	transcription_regulat	-
12153	FLJ23506	NM_024833.1	1298	agagctctgcttctctgcttct	61803	transcription_regulat	-
12154	FLJ25078	NM_152485.2	688	ctgcagagctctctctctctg	61809	or	-
12155	FLJ30594	NM_153011.1	564	caatggagcttctctctctaac	61818	-	-
12156	FLJ30791	NM_144694.1	634	agagctctctgcttctctgctg	61826	transcription_regulat	-
12157	FLJ30921	NM_152360.2	1167	ttyaacctgggctcttctctact	61839	transcription_regulat	-
12158	FLJ30927	NM_144690.1	951	tactctgaactctctctctgctg	61853	transcription_regulat	-
12159	FLJ30932	NM_144693.1	682	agctctctctgcttctctctct	61871	transcription_regulat	-
12160	FLJ31030	NM_152478.1	948	gtgcgaacttgcgcgaactctaac	61900	transcription_regulat	-
12161	FLJ31100	NM_173631.2	604	tggaggaagacgacttctgctg	61907	transcription_regulat	-
12162	FLJ31139	NM_173657.1	360	gtggagctctctgcttctctaac	61922	or	-
12163	FLJ31295	NM_152320.1	1060	agagctcttggctctgaagctctca	61954	transcription_regulat	-
12164	FLJ31875	NM_182531.1	601	cagcactctgcgcagctctgctct	61965	transcription_regulat	-
12165	FLJ31986	NM_152476.1	2552	cagctctgttctctctctctctct	62030	transcription_regulat	-
12166	FLJ32130	NM_152458.4	853	ctctcgaagctctctctctctct	62032	transcription_regulat	-
12167	FLJ32191	NM_144689.3	462	gggtctcaactctcaggctatttt	62039	transcription_regulat	-
12168	FLJ32932	NM_152909.2	645	gggggagcttctggtctctctct	62080	transcription_regulat	-
12169	FLJ33071	NM_152457.1	987	agcactctctctctctctctct	62079	transcription_regulat	-
12170	FLJ33979	NM_152636.1	766	caggactctctctctctctctaac	62089	or	-
12171	FLJ34817	NM_152303.1	980	tctgtctgctctctctctctct	62111	transcription_regulat	-
					or	-	-

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12172	FLJ34917	NM_153263.1	1734	aggctctacccttgcgttaaac	62135	transcription_regulat	-
12173	FLJ35863	NM_152604.1	1635	tagtagttgctgcgtatcttc	62150	transcription_regulat	-
12174	FLJ36040	NM_173530.1	1601	ttggcgcgaattatctacaaac	62156	transcription_regulat	-
12175	FLJ36754	NM_173829.2	576	aagcattctctacactaataag	62162	-	-
12176	FLJ36991	NM_152477.1	534	ttgaaatcgcgcgttcacacgga	62169	transcription_regulat	-
12177	FLJ38499	NM_173797.2	1264	atgcacgtgcgcgttcacttaac	62209	-	-
12178	FLJ39036	NM_153356.1	510	tatataagcagctatttgaagc	62220	-	-
12179	FLJ390430	NM_178556.2	1573	ctatccgcgcacactctctctatc	62242	-	-
12180	FLJ390798	NM_153361.1	752	tgggcaagatgcatcaagagc	62249	-	-
12181	GP865	NM_003008.2	1326	aagcgactaccacaaatgatag	62270	receptor, activity,	-
12182	HEL308	NM_133636.1	2048	aagcgactatccatttggagt	62322	apoptosis,	-
12183	HEL1C1	NM_006828.1	4640	ctctctctctatgctagtatga	62505	signal transduction	-
12184	HEL2	NM_014877.1	4621	aggagagctttagatgctatcac	62599	transcription_regulat	-
12185	HNRNP9-	NM_014469.2	894	ccgtctctacagactctctgca	62727	-	nucleic acid binding
12186	HRB2	NM_007043.5	186	gagcattgtgcacattttctcc	62731	-	-
12187	HSA9947	NM_022089.1	288	ccgaaacacgtgtatcgaaata	62756	-	-
12188	HSPC055	NM_014153.2	569	aagctctgctcggaatactaaag	62797	-	see also 551/4 line
12189	HTF9C	NM_022727.3	1116	ctctcgtcgtcgcaagtcaaaag	62867	-	-
12190	HZF12	NM_033204.2	228	ctgtcgtcgtcgcaagtccaagt	62876	-	-
12191	JMP-1	NM_006546.2	1654	aggtctctatgattatcaact	62912	-	-
12192	KARS	NM_005548.1	566	ctctcgtcggaacataatgag	62929	-	-
12193	KIAA0052	NM_015360.2	735	ggcgcagatgacccattctatg	62988	-	see also 3862 line
12194	KIAA0062	NM_015050.1	748	caatgtcaagcagctgtttgagt	63077	-	see also 6389 line
12195	KIAA0150	NM_015117.1	1826	ggagagctctctccaaagact	63107	-	see also 6209 line
12196	KIAA0663	NM_014827.1	1812	cagatctgagcagcagcttaag	63109	-	-
12197	KIAA1055	NM_015079.2	1601	gacgcgcgcagacattttgaa	63123	transcription_regulat	-
12198	KIAA1295	NM_015694.1	1568	cggatggagccctctatttgg	63151	transcription_regulat	-
12199	KIAA1582	NM_016996.2	3710	aagttgcgcgcacatcaaat	63224	-	-
12200	KIAA1847	NM_032527.2	1166	gggtgcacacagcagctatgag	63245	-	-
12201	LERP04	NM_018471.1	360	ctgtcacacatcaatgaattt	63250	-	-
12202	LGAL512	NM_033101.2	804	atgttgacacgtctggtatatt	63277	-	-
12203	LP2	NM_024119.1	225	tgatctcgtctgcacacatg	63284	-	-
12204	LKAP	NM_014647.1	969	tgtactctcgttttttaag	63323	-	see also 5821 line
12205	LOC11325	NM_052879.3	726	agttcaaacactgtttattgaa	63471	-	-

chondrosarcoma(軟骨肉腫)

[illegible]

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12238	MGC17986	NM.153608.1	882	aggcacaacgcggatccatttgg	64273	-	transcription_regulat	-
12239	MGC2474	NM.023931.2	536	gcctggaggtttgtttcttccc	64283	-	transcription_regulat	-
12240	MGC28914	NM.144876.1	768	tgcaccaattttatttcagatac	64290	-	transcription_regulat	-
12241	MGC27016	NM.144879.2	141	aagtttcacagctttatcagat	64294	-	or	-
12242	MGC37104	NM.144884.1	1363	aggcctttacccattcttggaa	64372	-	transcription_regulat	-
12243	MGC33637	NM.152586.2	455	tggcttgagatcctacataca	64384	-	or	-
12244	MGC4054	NM.024341.1	878	gagcaacactcacagtgat	64424	-	transcription_regulat	-
12245	MGC41917	NM.153231.2	1127	tagcataagaccactaatc	64444	-	or	-
12246	MGC42415	NM.153963.1	849	tgccttggttcaactaatc	64451	-	-	-
12247	MGC43537	NM.178944.2	1269	agggttacaacgacataatgca	64470	-	transcription_regulat	-
12248	MGC4400	NM.032879.1	1119	aagtcgcgcctcaatagacata	64497	-	transcription_regulat	-
12249	MGC45380	NM.133466.1	1360	tagccttggtttatcattatc	64521	-	transcription_regulat	-
12250	MGC45586	NM.152803.2	754	ggggaggcctgattacaatagt	64541	-	transcription_regulat	-
12251	MGC48625	NM.182809.1	472	caagctctggagactatgatgaa	64556	-	transcription_regulat	-
12252	MK071P	NM.032390.3	187	atgcacacacacacacact	64568	-	or	-
12253	MKRN2	NM.014160.3	839	ttccatacacagttcatgtgt	64586	-	-	nucleic acid binding
12254	MKRN3	NM.005664.1	1423	cacgcatacagctatcaactg	64614	-	-	nucleic acid binding
12255	MNAB	NM.018835.1	2113	tggctctctctctgattttcca	64679	-	-	-
12256	MSI2	NM.136882.2	330	atgtagatgacacacgaaacg	64711	-	see also 9643 line	-
12257	MYEOV	NM.138768.1	784	caagctctgcgtctatgctca	64718	-	-	-
12258	NARS	NM.004539.2	416	ggagatgtgcgttagagag	64735	-	see also 3005 line	-
12259	NPM2	NM.182795.1	367	aggctgttcttcatcagattg	64769	-	-	-
12260	NPM3	NM.005993.1	230	ggggccaagacgatttaatg	64780	-	-	nucleic acid binding
12261	NUP12	NM.007342.1	1253	tgttgatgcaggctcaactct	64799	-	receptor activity	-
12262	POT1AHE2	NM.014290.1	2167	aggtttgcgcattcacacaat	64864	-	see also 5597 line	-
12263	PDP46	NM.032311.3	145	ggcggaagagcgcgttaatgc	64884	-	see also 9152 line	-
12264	PERC	NM.133263.2	2797	aagagcgcgtttgaactttgg	64927	-	receptor activity,	-
12265	PNX1	NM.017884.3	1061	agacgtctacacacagagagac	64948	-	transcription_regulat	-
12266	PNM43	NM.013364.1	398	tggctgcacacactttctgg	64963	-	see also 7170 line	-
12267	PP14	NM.139126.2	1374	ggaggtatggccttatgata	65011	-	see also 9660 line	-

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図4.6 (続き)

12268	PPPIR10	NM_002714.2	683	tgtgtgactgactgactgactg	65019	transcription_regulat	-
12269	PRC	NM_015062.3	2749	tgtctctatggccagctactacc	65075	or	-
12270	PRR3	NM_025263.1	483	cagcacatcctccagacagaag	65100	modular_function	-
12271	PSPI	NM_018282.1	652	cagcttctctctctccatctg	65111	unknown	-
12272	PTBP2	NM_021190.1	127	cagctctctctctccatctg	65137	see also 7362 line	-
12273	RAD52B	NM_145654.2	219	tgtctctctctctccatctg	65275	see also 8123 line	-
12274	RAVER1	NM_133455.1	340	cagctctctctctccatctg	65297	-	-
12275	RB4K	NM_021163.2	2628	aggaaatgaaagctctgtg	65328	transcription_regulat	-
12276	RBM14	NM_006282.1	2027	ggctctctctctctctctg	65351	or	-
12277	RECQL4	NM_004260.1	1038	cagctctctctctctctctg	65355	see also 4430 line	-
12278	RECQL5	NM_004293.3	1144	cagctgttgcctcttgaaata	65376	DNA helicase	osteosarcoma(骨腫性骨肉腫), Rothmund-Thomson syndrome(ローート・トムソン症候)
12279	RIG-I	NM_014314.2	1459	tgtgtgtctgtgtgtgagaaca	65424	DNA helicase	-
12280	RNA5E2	NM_002834.1	184	tgtgaacccagcagcatcatg	65470	hematopoietic-associated factor	-
12281	RNA5E3	NM_002835.1	366	tgtattctcgtgtgtcttactcc	65488	IA complex	-
12282	RNA5E4	NM_002837.3	709	gtgtgtctgtctgcaactgtg	65491	toxin	-
12283	RNA5E6	NM_005615.2	695	gagctgtccctccctcagctg	65505	pancreatic ribonuclease	-
12284	RNA5E8	NM_138331.1	155	cagctctgagcagcatcatg	65510	-	-
12285	RNP4	NM_018107.3	341	tgtgagcagcagcatcatg	65516	-	-
12286	RNP6	NM_153020.1	624	ctgtgagcagcagcatcatg	65547	-	-
12287	RoXAN	NM_017590.4	711	cgtgtgtctgagctgtgaga	65557	-	-
12288	RSN	NM_002556.2	4415	ctgtgagctgtgagcagctct	65642	see also 1994 line	-
12289	RY1	NM_006857.1	401	atgtctgtgtctctctctct	65644	see also 4804 line	-
12290	SART3	NM_014706.2	1104	ctgtctctacgtgtgtgtgaga	65663	-	-
12291	SBNO1	NM_018183.2	3260	aagctgtgtgtgtgtgtgt	65802	transcription_regulat	-
12292	SBZF3	NM_020394.2	480	ggagaaatctgtctgaagaaata	65854	or	-
12293	SECY43	NM_017846.3	610	cagctgtctgtgtgtgtgtgt	65918	-	-
12294	SFRS12	NM_139168.1	1540	agctgtgtgtgtgtgtgtgt	65949	see also 5672 line	-
12295	SHPBP	NM_015001.2	419	ggagcctgtgtgtgtgtgtgt	65962	see also 6175 line	-
12296	SLAHBP1	NM_014281.3	402	gtgtgtgtgtgtgtgtgtgt	66147	see also 5589 line	-
12297	SLM1	NM_152688.1	1101	gtgtgtgtgtgtgtgtgtgt	66157	-	-
12298	SDN1	NM_014390.1	2637	cagctgtgtgtgtgtgtgtgt	66213	see also 5650 line	-
12299	SFP45	NM_032905.3	1238	tgtgtgtgtgtgtgtgtgtgt	66244	see also 9342 line	-
12300	SRP46	NM_032102.1	652	cagctgtgtgtgtgtgtgtgt	66247	-	-
12301	SFRp35	NM_060743.2	230	tgtgtgtgtgtgtgtgtgtgt	66252	-	-
12302	SSX4	NM_005636.3	92	agggtgtgtgtgtgtgtgtgt	66279	transcription_regulat	synovial sarcoma(滑膜肉腫)

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12303	ISFK31	NM_031414.2	1205	tggatgaagggctcttactact	66312	-	-	see also 3015 line	-	-
12304	ISZF1	NM_016008.1	1212	tggctgagctttttgtgtgt	66382	-	-	-	-	-
12305	TS54	NM_015698.3	1115	atgtacaaaggaagccaaatata	66401	-	-	-	molecular function	-
12306	TDRD1	NM_190795.1	953	agggtatgcttaccgaattcaaaa	66427	-	-	-	unknown	-
12307	TDRD3	NM_030794.1	1387	gtgtatgacctattctttagat	66558	-	-	see also 3950 line	-	-
12308	TDRD4	NM_019038.2	1472	tggctgtctgaacatgtacaaat	66625	-	-	-	-	-
12309	TDRKH	NM_006862.2	599	cagctgagacaatgttactact	66669	-	-	-	-	-
12310	TFIP11	NM_012143.1	2674	ttgctgcatttgatctactact	66747	-	-	-	protein binding	-
12311	THQC4	NM_005782.1	59	ttgacagcaatcaatcaatcaac	66750	-	-	-	-	-
12312	TPARP	NM_015508.2	1324	aggtatccacagctctctctttgg	66790	-	-	see also 6442 line	-	-
12313	TNR0C	NM_014494.1	5324	cagctgagcagatctcaactact	66824	-	-	see also 5711 line	-	-
12314	TOE1	NM_025077.2	1522	atctctatgtctcaagatgtg	66894	-	-	transcription_regulat	-	-
12315	TRAF8	NM_004520.2	1154	atgtgtgctcttgaaagacaa	67013	-	-	or	-	-
12316	TRF4-2	NM_022447.1	431	atggagacactcaactatatta	67039	-	-	see also 3138 line	-	-
12317	TRAF56	NM_030981.1	1929	tggctgacggctctctctctca	67058	-	-	-	-	-
12318	BP	NM_007020.2	956	ggagagctgctgcggtgatcaagc	67071	-	-	-	-	-
12319	UNKL	NM_024023.1	1651	gtgcgcgtcacaggtttttgt	67099	-	-	-	-	-
12320	USP8	NM_004505.1	1803	ctggcccgcttggatcaacgcg	67107	-	-	-	ubiquitin C-	-
12321	ZC3HAV1	NM_020719.3	1943	aaaggtgtgtcgtcttaattgttg	67191	-	-	-	terminal hydrolase	-
12322	ZC3HDG1	NM_022750.1	1793	aagcacaaactacaggttgatgtt	67256	-	-	-	-	-
12323	ZCCH02	NM_017742.2	784	atggcttcaactgaactatattct	67287	-	-	-	-	-
12324	ZCCH05	NM_152684.1	304	aggacttagacagctctctatct	67324	-	-	-	-	-
12325	ZNF183L1	NM_178861.3	720	ttgaaagggtgctctactgtatc	67378	-	-	-	-	-
12326	ZNF2	NM_021088.1	1462	ctgggggacctgctctatcgtct	67386	-	-	transcription_regulat	-	-
12327	ZNF227	NM_182490.1	1204	caattagacacagagctctcaica	67400	-	-	transcription_regulat	-	-
12328	ZNF248	NM_021045.1	1293	tggaaatggagcctctatggatgc	67433	-	-	transcription_regulat	-	-
12329	ZNF350	NM_021632.2	1457	atgtcgtctgtgtgaagcgtaaa	67454	-	-	transcription_regulat	-	-
12330	ZNF354B	NM_058230.1	1024	tggtatcccttggatgattta	67467	-	-	transcription_regulat	-	-
12331	ZNF354G	NM_014594.1	1237	acgtattgttaacctatgaac	67487	-	-	or	-	-
12332	ZNF415	NM_019395.2	762	ggctgtacaaagccttgatca	67500	-	-	-	-	-
12333	ZNF428	NM_024106.1	1550	ttgggtatccctctatgcttaatt	67526	-	-	transcription_regulat	-	-
12334	ZNF54	NM_182594.1	950	cagattatcacactatcaica	67537	-	-	transcription_regulat	-	-

Ewing's sarcoma(ユーンイング肉腫)

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12335	ZNF471	NM_020813.1	1545	atgtaacctctgtgtactcttgg	-	67553	-	transcription_regulat	-
12336	ZNF514	NM_032788.1	728	tgtgtatgcacgtatgaatgac	-	67565	-	transcription_regulat	-
12337	ZNF75A	NM_153028.1	918	atgtatgcttcacagaagattg	-	67581	-	transcription_regulat	-
12338	ZNF77	NM_021217.1	491	gaattacccctaccgaactaac	-	67588	-	transcription_regulat	-
12339	ZNF92	NM_007139.2	902	caagtctcgtttcttaataaca	-	67605	-	transcription_regulat	-
12340	13CDNA73	NM_023037.1	5470	cttgagctcttctctacacat	-	67746	-	see also 8545 line	-
12341	AAK1	NM_014911.2	718	acgtgacgtcgtctgctgctg	-	67853	-	kinase related	-
12342	AARS1	NM_020745.1	2352	gtgtgacgtcctctgtact	-	67914	-	-	-
12343	ABCA1	NM_035902.2	3457	cggtggtctgaagtgtctctc	-	67973	-	see also 3842 line	-
12344	ABCA10	NM_080282.2	3266	aagtaactctgttaactctttt	-	68089	-	kinase related	-
12345	ABCA12	NM_015057.3	5692	caagtctcgtctgactctctaa	-	68289	-	see also 6534 line	-
12346	ABCA13	NM_152701.2	12090	gagaaggtctgactcattctc	-	68687	-	-	-
12347	ABCA2	NM_001006.2	1595	gtgtgcaacgtgactcattctc	-	68766	-	see also 1067 line	-
12348	ABCA3	NM_001089.1	1027	cagttacacacgtgagaattaca	-	68807	-	ATP-binding cassette (ABC) transporter	-
12349	ABCA4	NM_000350.1	867	cgagctttctcaaggtatcaatc	-	68851	-	see also 291 line	-
12350	ABCA5	NM_018672.2	5754	atgtatggtgaacagtacaacatc	-	69087	-	see also 7544 line	-
12351	ABCA6	NM_080284.2	4342	ggagctcgctcactcgaaagttag	-	69199	-	-	-
12352	ABCA7	NM_019112.2	5059	atgtgtgtctcactctctaaac	-	69220	-	-	-
12353	ABCA8	NM_007168.1	2565	aaagtgtctgttttaagttaa	-	69288	-	see also 4971 line	-
12354	ABCA9	NM_080283.2	2942	gaagcacagaacactgataag	-	69403	-	see also 3513 line	-
12355	ABCB1	NM_000927.2	932	gaagctaacaccactctcaga	-	69444	-	see also 804 line	-
12356	ABCB10	NM_012089.1	1097	caactactgtgaagcacttttga	-	69523	-	-	-
12357	ABCB11	NM_003742.2	1353	tgtgtgaagctgtgactgctca	-	69579	-	see also 2554 line	-
12358	ABCB4	NM_000443.2	3643	cttctctgtctctgaagctcaga	-	69705	-	see also 350 line	-
12359	ABCB5	NM_178559.3	593	gcgtctatgtgacacatattg	-	69758	-	-	-
12360	ABCB6	NM_005689.1	2033	cgaaaggtctgtgtgtgttga	-	69839	-	see also 3349 line	-
12361	ABCB7	NM_004299.2	1269	gtgtgacgtgactctacttgg	-	69880	-	home transporter	-
12362	ABCB8	NM_007168.2	483	gggtgtgctcactctgaagtac	-	69923	-	ATP-binding cassette (ABC) transporter	-
12363	ABCB9	NM_019624.1	1878	cgagctctctgacacaaactct	-	69956	-	see also 7732 line	-
12364	ABCC1	NM_004996.2	3159	cgctgctgtctctcaactattg	-	69991	-	see also 3489 line	-
12365	ABCC10	NM_033450.2	1710	gggtcactcgtgtctctcaacta	-	70017	-	see also 9427 line	-
12366	ABCC11	NM_035863.2	903	gtctctgtgaacctctagtctga	-	70056	-	-	-
12367	ABCC12	NM_033226.1	997	tgtcgaagctctcaactactgt	-	70117	-	see also 8384 line	-
12368	ABCC13	NM_138726.2	597	aagaacacctctactctctg	-	70207	-	-	-
12369	ABCC2	NM_000392.1	321	cgcttctgtctgtgatalaac	-	70234	-	see also 311 line	-
12370	ABCC3	NM_003786.2	2347	cgcttctgtctgactcttaca	-	70337	-	-	-

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12371	ABCC4	NM_005845.2	2848	ctgaccatccgcgcctacataaag	70451	-	channel	ATP-binding cassette (ABC) transporter	-
12372	ABCC5	NM_005988.1	4301	aggctccatgagatgattgctgc	70575	-	see also 3945 line	-	-
12373	ABCC6	NM_001171.2	1858	cgtgctgttagctcaattcttc	70588	-	-	translation	-
12374	ABCC8	NM_000352.2	2396	cgagcagccacttgatctacagg	70623	-	receptor activity	adreny/lurce receptor	diabetes mellitus(糖尿病), diabetes(糖尿病)
12375	ABCC9	NM_005891.1	1397	ttgccaactcaatgaattattatg	70683	-	see also 3953 line	-	-
12376	ABCC10	NM_000333.2	1351	ttgctccgctctgctgttattatg	70784	-	see also 3 line	-	-
12377	ABCD2	NM_005164.2	1816	ctctcctgctgctcaaaatgctt	70845	-	see also 3828 line	-	-
12378	ABCE1	NM_005650.1	93	cgctgctgctgctcaattcttc	70946	-	see also 1974 line	-	-
12379	ABCE2	NM_002940.1	317	ttgctgctctcaattcttc	70987	-	see also 3956 line	-	-
12380	ABCF2	NM_005892.3	1231	aggctctgctgctgaagacact	71028	-	see also 7412 line	-	-
12381	ABCF3	NM_018358.1	138	cgagcagctgctcccgaaatga	71048	-	-	-	-
12382	ABCG1	NM_004915.2	809	aggaggtgctctcatcatgttc	71078	-	-	-	-
12383	ABCG2	NM_004827.1	1917	cgacttccacgatgatgatgatta	71138	-	-	-	-
12384	ABCG4	NM_022169.2	370	aaggagcagactcctgtttatgg	71154	-	see also 8326 line	-	-
12385	ABCG5	NM_022436.2	962	ttgcagcccgatcgctgaagcttg	71168	-	molecular function	unknown	Sitosterolemia(-), atherosclerosis(粥状硬化症)
12386	ABCG8	NM_022437.2	1291	agctgctacgtcctgcagatttc	71211	-	see also 8356 line	-	-
12387	ABL2	NM_005158.2	2496	ttggagctcagctcttaacagaa	71284	-	kinase related	-	-
12388	ACA0B	NM_001093.1	6822	aggagatcgatccagcttacaaga	71548	-	-	Transcription factor E2-alpha	-
12389	ACK1	NM_005781.2	831	agccaagtctgctgagtgaaag	71555	-	kinase related	-	-
12390	AGLY	NM_001086.2	1271	ggacagagctcaaatctttctc	71582	-	signal transduction	-	-
12391	ACVR1	NM_001105.2	824	cttgcctctggcactctgaaggg	71811	-	see also 682 line	-	-
12392	ACVR1B	NM_004302.3	1253	atgacctctgagctctgtattatgg	71851	-	receptor activity, kinase related, signal transduction	-	-
12393	ACVR1C	NM_145259.1	1864	ctgctctctgtattagaagact	71684	-	receptor activity, kinase related	-	-
12394	ACVR2	NM_001618.2	788	agcccaagctgttaacagatatt	71718	-	see also 1070 line	-	-
12395	ACVR2B	NM_001108.2	935	ggaggccaaagccgctcttttc	71744	-	see also 687 line	-	-
12396	ACVRL1	NM_000020.1	1008	ggagactgactatataacacact	71754	-	transforming growth factor-beta receptor	-	Rendu-Osler-Weber disease(ランデン・オスラー・ウェーバー病), hereditary hemorrhagic telangiectasia(遺伝性出血性毛細血管拡張症)
12397	ADRBK1	NM_001619.2	956	ggagcttgactatgcctcttatg	71770	-	kinase related, G-protein coupled receptor kinase	-	-
12398	ADRBK2	NM_005160.2	448	tagaacctgataaagcttattatg	71783	-	see also 3827 line	-	-
12399	AFGL1	NM_001132.1	892	atgagcctgctgcagctttctatg	71829	-	-	metalloproteinase	-
12400	AFURS1	NM_024524.2	3343	caaaagctattccgatttaaatg	71876	-	-	-	-
12401	AK1	NM_000476.1	550	cgcttcagctctctatagaata	71896	-	kinase related	adenylate kinase	hemolytic anemia(溶血性貧血)

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12402	AK3L1	NM_016282.2	535	ccgcacgtgcgcagctctataac	71913	-	see also 6779 line	-
12403	AK5	NM_012093.2	2610	ctgcacagctctgactctattt	71959	-	kinase related	-
12404	AK72	NM_001826.2	291	agagcgcgcgcctctctatttg	71966	-	see also 1078 line	-
12405	ALS2CR2	NM_018571.4	1223	tggccactgactcagctattt	72021	-	see also 7527 line	-
12406	ALS2CR7	NM_0139158.1	282	aaagctctatgcagcagctaac	72025	-	kinase related	-
12407	AMHR2	NM_020547.1	138	cagcagcaccctgctctcttg	72049	-	see also 7600 line	-
12408	ANKK1	NM_178510.1	1118	cagctctgcgcgcgagaattt	72074	-	kinase related	-
12409	ANKRD3	NM_020639.1	1411	aagctgctctctctcaacatgc	72091	-	protein tyrosine kinase	-
12410	APAF1	NM_001160.2	1215	agctctctctcgcctctctgctg	72111	-	kinase related	-
12411	APB-1	NM_014278.2	420	tatctctgcagcagcagatataca	72220	-	see also 734 line	-
12412	ARAF1	NM_001854.1	258	ggcgcacgcctcagagctacccgc	72293	-	see also 557 line	-
12413	ARK5	NM_014840.1	2131	atgcctctgctgcttgcctca	72324	-	see also 1094 line	-
12414	ASHA1	NM_004317.1	639	ccgccttgatgcagcagcagctca	72347	-	protein tyrosine kinase	-
12415	ASS	NM_000050.2	553	cagatgagatgcagcagcagca	72352	-	arsenite-transporting	-
12416	ATP10A	NM_024490.2	923	agatttcgcgcctgctcatca	72359	-	citullinuria(シトルリン尿症)	-
12417	ATP10D	NM_020453.2	2347	cagcagcagcgccttgcttat	72469	-	see also 8619 line	-
12418	ATP12A	NM_001676.2	867	agggctgctcgggttgatactca	72525	-	plasma membrane cation-transporting ATPase	Alzheimer disease(アルツハイマー病)
12419	ATP1A1	NM_000701.5	1976	atctgaattccctctcgtatcat	72612	-	plasma membrane cation-transporting	-
12420	ATP1A2	NM_000702.1	1350	tggcgcgcgcctgctcgaattgc	72633	-	ATPase	-
12421	ATP1A3	NM_132798.2	235	agctctcccaaatcaatacaaca	72646	-	sodium/potassium exchanging	-
12422	ATP1A4	NM_144698.1	3019	ctatgtaaccctgctctatttca	72670	-	see also 431 line	-
12423	ATP2A2	NM_001881.2	568	aagatgctgcgcgcgtatgagc	72716	-	see also 9934 line	-
12424	ATP2A3	NM_005173.2	1018	ggcggcgcctgctcactactca	72784	-	see also 1102 line	-
12425	ATP2B1	NM_001682.1	3592	aagaagcttgcttgcacaactta	72807	-	plasma membrane cation-transporting ATPase	-
12426	ATP2B3	NM_021949.1	1341	gtgcacgcgcctctatgcact	72947	-	plasma membrane cation-transporting	-
12427	ATP2C1	NM_014382.1	2351	cagctgcagcagctatgcagc	73027	-	ATPase	-
12428	ATP4A	NM_000704.1	2011	gtgcgcagctgcagcagtaatgc	73069	-	see also 5642 line	-
12429	ATP5A1	NM_004046.3	674	cagcgtgcactcatttattgga	73092	-	see also 433 line	-
						-	hydrogen-transporting two-sector ATPase	-

12430	ATP5B	NM_001686.2	800	aaagtacgctgctgtatattgca	73127	-	channel	hydrogen- translocating F- type ATPase	-
12431	ATP6A1	NM_001183.3	949	ctgacctatgaacgactcttgg	73153	-	-	hydrogen- translocating two- sector ATPase	-
12432	ATP6V1A	NM_001690.2	565	atgttaaccacgaacacaaagg	73179	-	see also 1107 line	-	-
12433	ATP8V1B1	NM_001692.2	1540	ccgtgtatgcagagcttcttcc	73243	-	-	hydrogen- translocating V- type ATPase	renal tubular acidosis(腎尿細管性アシドーシス)
12434	ATP8V1B2	NM_001693.2	1234	gaagaaagacgcgtatattctca	73269	-	see also 1110 line	-	-
12435	ATP8V1C2	NM_14583.1	102	aaagccacccgctctatattac	73332	-	see also 9708 line	-	-
12436	ATP8V1H	NM_017594.1	495	caagctctctgctatattctaac	73361	-	see also 6582 line	-	-
12437	ATP7A	NM_000952.1	3772	agctgcgctctctctattctg	73498	-	see also 21 line	-	-
12438	ATP7B	NM_000953.1	3624	gaagctcaacagcttcaacattt	73587	-	see also 26 line	-	-
12439	ATP9A1	NM_006095.1	1163	ctgtctatgctgcaactctaat	73630	-	see also 4236 line	-	-
12440	ATP9A2	NM_016529.3	2434	gtgtatctctccgactatttta	73762	-	see also 6904 line	-	-
12441	ATP8B1	NM_005603.1	2758	atgtcgaagtgctctctcttcc	73869	-	-	plasma membrane cation-transporting ATPase	benign recurrent intrahepatic cholestasis(肝内胆 汁うっ滞), familial intrahepatic cholestasis(家族 性肝内胆汁うっ滞), intrahepatic cholestasis(肝内胆汁壅滞), Alzheimer
12442	AT5V	NM_004321.3	1585	gcagcactctggctctctctct	73903	-	see also 2893 line	-	-
12443	AURKB	NM_004217.1	240	caatggagacacccagactctaa	73928	-	kinase, related, cell cycle	-	-
12444	AURKC	NM_003160.1	670	caagccacacccacgaabaaga	73946	-	kinase, related, cell cycle	-	-
12445	AXL	NM_001695.3	1857	aaagaagagacccttatggaga	73957	-	see also 1112 line	-	-
12446	BCKDK	NM_005881.1	1224	tggaggaactctctcaaaagctc	73982	-	see also 4092 line	-	-
12447	BGS1L	NM_004326.3	933	caagctctgctctctctctttag	74000	-	see also 2896 line	-	-
12448	BLK	NM_001715.2	1177	agccctctgctgagcactctct	74011	-	protein tyrosine kinase	-	-
12449	BMP2K	NM_017593.3	1368	ctatgaattctggcaactctaga	74084	-	see also 7045 line	-	-
12450	BMPRIA	NM_004325.1	658	caagctctccggcagatagatg	74102	-	see also 2897 line	-	-
12451	BMPRIIB	NM_001203.1	1498	gaagttctcagagatgtctcttc	74141	-	receptor activity, signal transduction	transforming growth factor-beta receptor	Alzheimer disease(アルツハイマー病), Aarskog- Scott syndrome(Aarskog-Scott症候群)
12452	BMPRI2	NM_001204.4	1221	ctgattctccagagatgatattg	74169	-	kinase, related	-	-
12453	BMS1L	NM_014753.1	1742	cagctctccctccctctctctct	74252	-	see also 788 line	-	-
12454	BMX	NM_001721.3	700	tagccaactatgcacacpatca	74270	-	kinase, related	signal transducer	-
12455	BRAF	NM_004333.2	588	cagctcagagacagctcaagaaa	74313	-	kinase, related, apoptosis	receptor signaling protein	-
12456	BTIK	NM_000061.1	1147	agagctgagatgcattctatttg	74387	-	see also 36 line	-	melanoma(メラノーマ)
12457	BUB1	NM_004336.1	676	aagatgctatcagctctctaat	74412	-	see also 2898 line	-	-

12458	BUB1B	NM_001211.3	417	gagtgtaattatcaagcttatt	74485	-	kinase, related, cell cycle	protein serine/threonine kinase
12459	C14orf127	NM_025152.1	237	ttagcaactacacgaacgcttag	74556	-	-	-
12460	C14orf131	NM_018335.1	1126	tgttcctccctacgaactaatt	74599	-	-	-
12461	C14orf20	NM_174944.1	1134	caagctccacacacacatacaaa	74608	-	kinase, related	-
12462	C20orf23	NM_017683.1	1610	atgcttcccaactgaacaaatatt	74651	-	-	-
12463	C20orf64	NM_033550.2	562	atgttcccaactgcttatattag	74712	-	kinase, related	-
12464	C20orf97	NM_021158.2	598	gaattgtgtacaactaatgaa	74721	-	kinase, related, apoptosis	-
12465	C6orf199	NM_145025.2	918	ttttatagatcaactaaatatt	74740	-	kinase, related	-
12466	G8FW	NM_025195.2	1614	cggtttacatcgatcagaatag	74757	-	kinase, related	-
12467	CACNA1B	NM_000718.1	4513	cgagcagctgctcagtcagaag	74790	-	see also 435 line	-
12468	CAD	NM_004341.2	5393	agggggatgtgctatctatctg	74802	-	-	dihydroxylase calmodulin- dependent protein kinase I
12469	CAANK1	NM_003856.3	572	ctgcatgacgtgcggttctgaa	74817	-	kinase, related, signal transduction	-
12470	CAANK1D	NM_020397.1	296	ttagctctctctgaaagatttag	74827	-	kinase, related	-
12471	CAANK7	NM_020439.1	405	caagttttctgttcagtgaaata	74855	-	kinase, related	-
12472	CAANK2A	NM_015981.2	394	gggcaacacactactgattcttg	74870	-	see also 6581 line	-
12473	CAANK2B	NM_001220.3	399	ccctctctctgagcattccaaaca	74885	-	see also 801 line	-
12474	CAANK2D	NM_001221.2	1778	atgcgcctctgacagcatatttt	75020	-	see also 803 line	-
12475	CAANK2G	NM_001222.2	593	tgtctagcctcagatgacagag	75038	-	see also 814 line	-
12476	CAANK4	NM_001744.3	216	aggtatcgtctgacgtttcttc	75051	-	see also 9146 line	-
12477	CAANK1	NM_032394.2	303	ctgtgacccctgcagttactaca	75080	-	kinase, related, transcription regulat or	-
12478	CAANK2	NM_006549.3	1723	agggcatgagtaactactatcc	75102	-	-	-
12479	CARD12	NM_021209.3	2027	caaggacacatcccgaattacta	75154	-	apoptosis	apoptosis regulator
12480	CARD15	NM_022162.1	582	aggtttgttgacccagatgaatt	75187	-	see also 8318 line	-
12481	CARD4	NM_006092.1	2332	ccagcttgatgctgaagaattcaa	75229	-	apoptosis, signal transduction	tropomyosin binding
12482	CARK	NM_015976.1	562	tgtcaatctgctgctgctctgag	75264	-	kinase, related	-
12483	CASK	NM_003068.1	86	agttttgacagatgctgacac	75317	-	see also 2505 line	-
12484	CCRH	NM_012119.2	808	agggcaacagatgattgaacagc	75403	-	kinase, related	-
12485	CCIT2	NM_006431.1	542	tgcgcggcacaactactctca	75424	-	cell cycle	chaperone
12486	CCIT3	NM_005998.2	174	caagatctatctcgaactcttgg	75434	-	-	chaperone
12487	CCIT4	NM_006430.2	1440	gaattgacctgcgttaactgca	75504	-	see also 4500 line	-
12488	CGT5	NM_012073.2	535	caagctgagctctctttgaca	75531	-	-	chaperone
12489	CGT6A	NM_001762.2	1627	aagtaggctttgtgataactat	75574	-	-	chaperone
12490	CGT6B	NM_006584.1	381	ctgacccataaataagctaca	75583	-	-	protein transporter
12491	CGT7	NM_006429.1	613	caagtgtgtctctgattgtttg	75627	-	cell cycle	chaperone
12492	CGT8	NM_006585.1	885	ctgtgtcaaatctctgtgaaca	75678	-	-	chaperonin ATPase

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12493	CD02	NM_001786.2	656	tgaggctagctgtgtactcaact	75723	kinase, related, cell cycle	-	-
12494	CD02L5	NM_003716.2	2730	aaactctgctctactacaagg	75779	kinase, related	-	-
12495	CD042BP	NM_003807.2	4748	gtgtctctgagcaaatgtcca	75942	kinase, related	-	-
12496	CD042BP	NM_006035.2	2733	aaactcaagtctggcaactcatt	75996	see also 4206 line	-	-
12497	CD06	NM_001254.2	1142	tggtgtctgtgtgtgtctcaat	76053	cell cycle, E2F-4/DP-1 complex	-	-
12498	CD07	NM_003503.2	1344	ttgtctgttggagatccatt	76111	kinase, related, see also 2360 line	-	-
12499	CDK10	NM_003674.2	980	cggagacgacccctacacaccc	76128	cell cycle	-	-
12500	CDK2	NM_001798.2	689	ttggatccctgttctgttaaca	76134	kinase, related, see also 1175 line	-	-
12501	CDK3	NM_001258.1	612	ttggacgcaactctctacacca	76143	cell cycle cyclin-dependent protein kinase	-	-
12502	CDK4	NM_000075.2	246	gagccctgtgctcaaatgtgt	76145	-	-	Well-differentiated liposarcoma(高分化型脂肪肉腫), rhabdomyosarcoma(横紋筋肉腫), liposarcoma(脂肪肉腫), chondrosarcoma(軟骨肉腫), osteosarcoma(骨髄性骨肉腫), Ewing's sarcoma(ユーンク肉腫), melanoma(メラノーマ), dysplastic nevus syndrome(デイスプラステック・ニューバス症候群), nerve sheath tumors(神経鞘腫), astrocytic tumors(星状細胞腫)
12503	CDK5	NM_004935.2	681	atgtctgacgaacttgaaagg	76169	kinase, related, protein tyrosine kinase	-	Alzheimer disease(アルツハイマー病)
12504	CDK6	NM_001259.2	606	tggtctgtccctctctatagt	76179	cell cycle see also 819 line	-	-
12505	CDK7	NM_001799.2	575	ggggagccccaataagcctatcc	76204	transcription, regulat or, cell cycle cyclin-dependent protein kinase	-	-
12506	CDK8	NM_001260.1	979	ttggaccataaagcgactacc	76251	kinase, related, transcription, regulat protein serine/threonine kinase	-	-
12507	CDK9	NM_001261.2	855	ttggccaacgtggacaactaga	76274	transcription, regulat or, kinase, related, cyclin-dependent protein kinase	-	-
12508	CDK11	NM_004196.3	486	ctgacagcgagctgctctacca	76285	kinase, related, cell cycle cyclin-dependent protein kinase	-	-
12509	CDK12	NM_003946.2	1665	ggggacttgagctatccaacttc	76348	kinase, related, signal transduction	-	-
12510	CDK13	NM_016068.2	498	ttggctctccgaatgatttttaa	76367	-	-	-
12511	CDK15	NM_003159.1	1613	gagctgtcatagctattattgaca	76433	kinase, related	-	protein kinase CK2
12512	CENPE	NM_001813.1	5573	atgacatcaactatcttaactga	76574	-	-	infantile spasms(小児てんかん)
12513	CFTR	NM_000492.2	1174	atggagctcactgtcgactttccc	76667	kinetochore motor	-	-
12514	CGI-04	NM_015936.1	1265	ttgttcccgaggatctcgatga	76793	see also 384 line	-	-

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12515	CQ-152	NM_020410.1	441	cgagcttaccatcctacacac	78812	-	-	see also 7866 line	-
12516	CHEK1	NM_001274.2	1148	cgagcctcaccatcttataact	78866	-	-	see also 840 line	-
12517	CHEK2	NM_007194.2	1030	cttccctcctgactctgattatg	78882	-	-	see also 4996 line	-
12518	CIT	NM_007174.1	4713	tgagctaccccttgagatgaagt	77080	-	-	see also 4975 line	-
12519	CLK1	NM_004071.1	359	tagtagagcgtcacttaactgaagt	77110	-	-	kinase related, cell cycle	protein serine/threonine kinase
12520	CLK2	NM_001281.1	331	gcctctacacgggctatctctcgg	77152	-	-	kinase related	-
12521	CLK3	NM_001282.1	245	cgacccgctcagcagctactatcc	77185	-	-	kinase related	-
12522	CLK4	NM_020666.1	207	ccggagatctagcttgccgatacca	77181	-	-	see also 4702 line	-
12523	CLPX	NM_008680.3	976	ctggcaacaacctctgactaatg	77237	-	-	see also 4719 line	-
12524	CNH	NM_004073.1	174	cgagctcctcagctctcaagctca	77272	-	-	see also 2743 line	-
12525	CNTN6	NM_014461.2	1602	aggaacggagaccccttagacaaa	77329	-	-	see also 5690 line	-
12526	CPK1	NM_001875.2	3834	tgcttcatttaacgctccatcttc	77468	-	-	carbamoyl- phosphate synthase	hyperammonemia(高アンモニア血症)
12527	CRK	NM_016507.1	381	cgagcgttcctccgagctactctaa	77494	-	-	see also 6883 line	-
12528	CSF1R	NM_005211.2	2377	agagctgagctatgaagatctcc	77607	-	-	see also 3661 line	-
12529	CSNK1A1	NM_001892.3	796	agggcttaaaaggctcaacaaga	77640	-	-	casein kinase I	-
12530	CSNK1D	NM_001893.3	417	agcttgcctacacagctctgaagt	77643	-	-	kinase related, signal transduction	-
12531	CSNK1E	NM_001894.4	450	cgagccatgacagctatctact	77668	-	-	see also 1209 line	-
12532	CSNK1G1	NM_022048.1	523	gtgacggaaattctcttgaag	77685	-	-	see also 8248 line	-
12533	CSNK1G2	NM_001319.5	228	gagctcgcctcagtagaagaagct	77703	-	-	kinase related, signal transduction	-
12534	CSNK1G3	NM_004384.1	1199	tgagctctggctcagctgttcgaat	77732	-	-	see also 2844 line	-
12535	CSNK2A2	NM_001896.2	670	tgagctctggctcagtagatctacc	77756	-	-	see also 1210 line	-
12536	CS-PG4	NM_001897.2	3196	cgagatctggccctctatgagctc	77765	-	-	melanoma(メラノーマ)	-
12537	CS-PG6	NM_004453.2	894	agagatctcagccagcaagctaga	77807	-	-	see also 3793 line	-
12538	DAPK1	NM_004938.1	2040	gggtctctgattatctcaagaca	77935	-	-	see also 3434 line	-
12539	DAPK3	NM_001348.1	116	acgttgagagacactatgataatg	77976	-	-	kinase related, apoptosis	-
12540	DCAAML1	NM_004734.1	2224	cgagcccaaccctgagtagaccca	78012	-	-	see also 3253 line	-
12541	DDK	NM_000788.1	635	atgacttgatgataaccatttt	78030	-	-	kinase related receptor, activator, kinase related, signal transduction	-
12542	DDR1	NM_001954.3	2303	acgagccctctctgattgattact	78052	-	-	kinase related, signal transduction	-
12543	DDR2	NM_006182.1	1758	tgagctacagctgactctttcc	78098	-	-	kinase related, receptor, activator, signal transduction	-
12544	DDX32	NM_018180.2	1584	gtttcaacccagcaataaagacc	78145	-	-	transmembrane receptor protein tyrosine kinase	-
12545	DGKE	NM_003647.1	1022	cgagcaagatctctccatctaca	78197	-	-	see also 2471 line	-

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12546	DKFZp334 G1418	NM_173655.1	1213	ctggtcaatgcgaactatgatg	78282	-	see also 10106 line	
12547	DKFZP434 G2228	NM_031217.2	2641	gtttctgcgaagaattcaatt	78367	-	see also 8994 line	
12548	DKFZp 27 AD71	NM_152268.2	378	agaaagctctctcgaactataga	78371	-	-	-
12549	DKFZp 761 P010	NM_018423.1	1461	ttagttgaactcaaacctatctgc	78413	-	kinase related	-
12550	DLAT	NM_001931.2	1323	ttctctcctgataatgaacatca	78449	-	see also 1233 line	-
12551	DNPK	NM_004409.1	1566	cttggcttattctcgtatgaatt	78478	-	protein serine/threonine kinase	-
12552	DNHA1	NM_003771.1	3753	atctgggaattctctctatgaag	78558	-	kinase related	-
12553	DNHA3	NM_017539.1	8962	cttgaggctgcctactactatct	79039	-	see also 2579 line	-
12554	DNHA5	NM_001369.1	13811	caattcgaacgacttgaactctc	79056	-	see also 7017 line	-
12555	DNHA7	NM_018897.1	5741	caattcgaactcgaatgaacttt	79685	-	-	-
12556	DNHA8	NM_001371.1	1821	cgactctatgcgcgaactgaaga	79942	-	see also 937 line	-
12557	DNHA9	NM_001372.2	11644	cgagcgggtgacctatgctttg	80481	-	-	-
12558	DNCH1	NM_001376.2	2392	ggagagcttctgaactatgaagc	80578	-	see also 943 line	-
12559	DNCL2	NM_006141.2	1467	cgactctatgataaacaactct	80838	-	motor	-
12560	DPKC	NM_025233.3	1140	ctctctgcctctcatatgaag	80848	-	see also 8886 line	-
12561	DOX1	NM_133637.1	561	cttggagctgctgactatagctg	80858	-	see also 9590 line	-
12562	DTYMK	NM_012145.1	482	tgcacatgaactctatagaagc	80901	-	kinase related,	-
12563	DYRK1B	NM_004714.1	599	tctctgaagctctgaagaattca	80971	-	cell cycle	thymidylate kinase
12564	DYRK2	NM_003583.2	318	gttctctacgcacacacacattga	80989	-	see also 3235 line	-
12565	DYRK3	NM_003582.1	945	tgtatgatgaagctatctacaca	81041	-	kinase related	protein tyrosine kinase
12566	DYRK4	NM_003845.1	1805	tgtgagcagctctccagaagctca	81094	-	kinase related	protein tyrosine kinase
12567	DYTI1	NM_000113.1	527	gtctgaggtctctctctatatt	81105	-	see also 96 line	-
12568	EGFR	NM_005228.2	2328	gtctcttccgcacagctatagaag	81167	-	receptor activity, cell cycle,	esophageal cancer (食道癌), ONS Tumours (中枢神経腫瘍), squamous cell carcinoma (扁平上皮細胞癌), astrocytic tumors (星状細胞), squamous cell cancer (扁平上皮癌)
12569	EHDA	NM_139285.2	1035	ccagcagctacacggaaactctaca	81204	-	signal transduction	Thyroid hormone receptor beta-2 nucleic acid binding
12570	EIF2AK3	NM_004836.2	3486	attggaacgacctgaactataga	81286	-	see also 3353 line	-
12571	EPB42	NM_000119.1	1443	cgattgagctctctctcatatg	81300	-	structural constituent of cytoskeleton	hereditary hemolytic anemia (遺伝性溶血性貧血), hereditary spherocytosis (遺伝性球形赤血球症)
12572	EPHA1	NM_005232.2	1726	gagatttgagcgtctctcttgg	81326	-	see also 3668 line	-
12573	EPHA2	NM_004431.2	1535	gtgggaattacgaagctcaatcaco	81348	-	receptor activity, kinase related,	signal transduction

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12574	EPHA3	NM_005233.3	1502	ctgcggttcgcatcacaaactaet	81397	-	receptor activity, signal transduction, kinase related	-	-
12575	EPHA4	NM_004438.2	554	ggagatgaagccatgaatcaaa	81459	-	see also 2970 line	-	-
12576	EPHA5	NM_004439.3	1581	aagagccacgactacagctatc	81526	-	see also 2972 line	-	-
12577	EPHA7	NM_004440.2	2544	tgcctctccagcttatatagc	81625	-	see also 2974 line	-	-
12578	EPHA8	NM_020526.2	829	ggcgaacacacccaagatgaact	81646	-	see also 7887 line	-	-
12579	EPH81	NM_004441.2	1906	cagggaacaggctctatagaag	81680	-	see also 2980 line	-	-
12580	EPH82	NM_004442.4	231	ctgctctaggaacaaagttatcc	81694	-	kinase related, signal transduction	-	bladder cancer(膀胱癌)、neuroblastoma(神経芽細胞腫)
12581	EPH83	NM_004443.3	2376	ggtgtgcctgctgcctcgaaca	81732	-	receptor activity, kinase related, signal transduction	-	-
12582	EPH84	NM_004444.3	1241	cagccaatgcacactcaaccc	81742	-	receptor activity, kinase related, signal transduction	-	-
12583	EPH86	NM_004445.1	2744	aagctgctctctctatatcaag	81774	-	receptor activity, kinase related, signal transduction	-	-
12584	EP85	NM_004446.1	3665	ctgcacactcgaactctgtgt	81892	-	signal transduction	-	neuroblastoma(神経芽細胞腫)
12585	ERB82	NM_004448.1	3386	aaggagctcctcgatgattt	81940	-	receptor activity, kinase related, signal transduction	-	bladder transitional cell carcinoma(膀胱移行上皮癌)、cancer of the Fallopian tube(卵管癌)、breast cancer(乳癌)、Li-Fraumeni syndrome(リー・フラウメニ症候群)、lung cancer(肺癌)、osteosarcoma(骨髄性肉腫)、ovarian cancer(卵巣性卵巣癌)、prostate cancer(前立腺癌)、squamous cell
12586	ERB83	NM_001982.1	2938	aggctacgcttgcctgaatcc	82003	-	receptor activity, signal transduction, kinase related	-	epidermal growth factor receptor
12587	ERB84	NM_005235.1	3846	tggctgctgctgcctctcttgc	82119	-	receptor activity, signal transduction, kinase related	-	epidermal growth factor receptor
12588	ERK8	NM_130021.1	263	cagagacacagcagcactttac	82123	-	kinase related	-	-
12589	FER	NM_005246.1	1598	atgcacatcagcttcaatctatg	82158	-	see also 3886 line	-	-
12590	FES	NM_002005.2	1771	caagttggacggggaacttgc	82200	-	kinase related	-	protein tyrosine kinase

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12591	FGFR3	NM_000142.2	938	cgagcgacacacctaagctaac	82277	-	receptor activity, kinase related, signal transduction	-	bladder transitional cell carcinoma(膀胱移行上皮癌), thymophoria, thymoma(胸腺性奇異形), acromioplastia(軟骨形成不全症), acrochialosyndyactyl(ワールマンブルグ症候群), bladder cancer(膀胱癌), craniofacial dysostosis(頭蓋面发育不全), Muenke syndrome(Muenke症候群)
12592	FGFR4	NM_002011.2	1497	cggctcgtcgtgctagctaac	82286	-	receptor activity, kinase related, signal transduction	-	
12593	FGR	NM_005248.1	719	gaggcgatcgtctgaagctaac	82292	-	kinase related	-	
12594	FGN	NM_018086.1	1663	gagagcaaatcgtctattttg	82342	-	kinase related	-	
12595	FGN1	NM_022116.2	376	agaattatcgtcgaattcctc	82366	-	see also 8278 line	-	
12596	FLJ10074	NM_017988.2	102	tgggtttcgttaattcatta	82432	-	kinase related	-	
12597	FLJ10326	NM_018060.2	2483	gttgcaatcgagactcattc	82558	-	see also 7221 line	-	
12598	FLJ10498	NM_018114.3	1451	ctgtaacacagatgctatgc	82582	-	-	-	
12599	FLJ10514	NM_018122.3	1188	caggttcgcgatcttcgaga	82607	-	see also 7266 line	-	
12600	FLJ10709	NM_018185.1	377	cagttcaactcaaaagataga	82642	-	-	-	
12601	FLJ10774	NM_024662.1	1118	tggatcaacaactcttttta	82658	-	see also 5650 line	-	
12602	FLJ12118	NM_024537.1	1147	aggacacagctcctcctgaag	82712	-	-	-	
12603	FLJ12328	NM_025150.3	1005	atcaactatgactttatcaag	82735	-	-	-	
12604	FLJ12735	NM_024857.3	5562	agatcaacacacagatcttact	82789	-	-	-	
12605	FLJ12663	NM_022838.1	2068	tggatcaactcttcaacagat	82846	-	-	-	
12606	FLJ13490	NM_024942.1	1361	ctggatcttctctcaagatct	82964	-	-	-	
12607	FLJ14800	NM_032810.2	1101	aggactctgctcgtctatcag	82984	-	see also 5252 line	-	
12608	FLJ14813	NM_032844.1	837	aggactctgctcttctcagc	83074	-	see also 5309 line	-	
12609	FLJ20245	NM_017723.1	428	cggagactcgcgcaagtatcg	83063	-	-	-	
12610	FLJ20559	NM_017881.1	651	gtgcccctgactcaaaataga	83082	-	kinase related	-	
12611	FLJ20574	NM_017886.1	175	gcagcgaaggaacaactaat	83089	-	kinase related	-	
12612	FLJ20604	NM_017897.1	670	cagatcagattcgtatataact	83166	-	-	-	
12613	FLJ21019	NM_024927.3	1845	cagactccggttgagactagt	83166	-	-	-	
12614	FLJ22002	NM_024838.3	1645	aaagtgcgtctactcaact	83215	-	see also 8750 line	-	
12615	FLJ22761	NM_025130.2	1780	ggagtcagtcgaatgataaaca	83264	-	kinase related	-	
12616	FLJ22865	NM_025108.3	1527	ctgcatatcgtcgtttgttga	83284	-	see also 8864 line	-	
12617	FLJ22955	NM_024819.3	560	aggatcacctcactgattctcg	83304	-	kinase related	-	
12618	FLJ23074	NM_025052.1	456	gtgtatagatcagatataaaga	83312	-	kinase related	-	
12619	FLJ23356	NM_032237.2	679	aggatgatacaactctgctaac	83325	-	see also 3128 line	-	
12620	FLJ23441	NM_024678.3	1481	tggactctcgttttggatct	83374	-	-	-	
12621	FLJ25005	NM_132334.2	1043	gtggcagctcgcctcactaat	83390	-	-	-	
12622	FLJ25008	NM_144810.1	821	ctggagactctcgtacatcgg	83437	-	kinase related	-	
12623	FLJ31384	NM_152463.1	1643	cagatctctcgcagactacaa	83458	-	-	-	
12624	FLJ32865	NM_152334.1	1146	cttgatctctcgaactctcaa	83481	-	kinase related	-	

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12625	FL32704	NM_152572.2	1135	ctggcaccacgaatcgaatcc	83489	-	kinase, related, signal transduction	-
12626	FL34369	NM_152846.1	1151	ctggcaccacgaatcgaatcc	83527	-	-	-
12627	FL37300	NM_152059.1	1219	caagcaccacgaatcgaatga	83550	-	-	-
12628	FLT1	NM_002019.2	723	ccggctgaagtcacatcacca	83563	-	receptor activity, signal transduction	vascular endothelial growth factor receptor
12629	FLT3	NM_004118.1	2546	ttagatgctgcgagatcatcg	83730	-	see also 2784 line	bladder cancer (膀胱癌)
12630	FLT4	NM_002020.1	1685	ccgacgcttcacacatcgatcc	83757	-	receptor activity, signal transduction	-
12631	PPGS	NM_004857.2	413	cggacacgacatcgcatcatgg	83770	-	kinase, related	-
12632	FRK	NM_002031.2	1871	agaaagacgactacattgaaca	83822	-	kinase, related, cell cycle	-
12633	FTFSDC	NM_015440.3	1466	tgcgctctctcagaagctaaa	83842	-	-	non-membrane spanning protein
12634	FLIK	NM_145059.1	595	cgcgcctctctcagaagctaaa	83864	-	see also 8417 line	lysine kinase
12635	FYN	NM_002037.3	778	atggacactctgctctatcagc	83974	-	kinase, related	-
12636	L2	NM_007285.6	191	gcgaagatctgcgcgaatatcc	83910	-	see also 1316 line	-
12637	GAK	NM_005255.1	1192	caatcctcgtcctattatgaaa	83944	-	protein transporter	-
12638	GALK1	NM_000154.1	375	tgcgttggcacaactatgtcaagc	83973	-	kinase, related, serine/threonine kinase	-
12639	GALK2	NM_002044.1	834	caagctaaactagagatgactct	84009	-	kinase related	galactokinase
12640	GARS	NM_002047.1	684	cttgcctttacagccacaagatga	84022	-	see also 1319 line	-
12641	GCK	NM_000162.2	948	gagcacaagaacatcgtataagc	84065	-	see also 1320 line	-
12642	GK2	NM_033214.1	874	cttgtataactcgggtctataagc	84083	-	kinase, related	-
12643	GMPS	NM_003875.1	856	atgcaattactcaacatttgt	84119	-	glycerol kinase	-
12644	GNE	NM_005476.3	1375	acgaaccctccgagttcgatagc	84185	-	ligase, with glutamine as amido-N-donor	-
12645	GPRK2L	NM_005507.1	1405	ctgcatctctcgcgtttactgt	84251	-	kinase, related	-
12646	GPRK5	NM_005508.1	358	aagacacctatagacagatgaact	84262	-	gpcr, kinase, related, signal transduction	receptor phosphorylating protein kinase C
12647	GPRK6	NM_002082.1	1548	caggactctccaggaagtttgc	84290	-	gpcr, kinase, related, binding	-
						-	see also 1347 line	-

Diabetes mellitus (糖尿病), diabetes (糖尿病), maturity-onset diabetes of the young (若年性成人型糖尿病)

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Accession	Gene	Protein	Function	Notes
12675	HSPA8	1310	85267	-
12676	HSPA9	235	85274	-
12677	SPCB	1816	85316	translation
12678	HSPD1	190	85323	heat shock protein
12679	HSPH1	2566	85380	see also 4636 line
12680	HUNK	2058	85408	protein serine/threonine kinase
12681	HYOUI	929	85432	chaperone
12682	IARS	743	85555	see also 1386 line
12683	ICK	7043	85593	see also 6094 line
12684	IGH3G	1125	85641	see also 2792 line
12685	IGF1R	3506	85700	see also 568 line
12686	IKBKE	1624	85707	NF-kappaB-inducing kinase
12687	ILK	324	85710	see also 3065 line
12688	IMMP2L	859	85739	-
12689	INSL3	356	85740	peptide hormone
12690	INSR	2762	85783	receptor activity, kinase related, Smad3/Sp-1 heterodimer
12691	INSRR	1956	85809	see also 5539 line
12692	IPT	905	85851	see also 7075 line
12693	IRAK1	153	85863	receptor activity, kinase related, transcription regulator or, protein binding
12694	IRAK2	1283	85892	kinase related, NF-kappaB-inducing kinase
12695	IRAK3	342	85903	see also 5001 line
12696	IRAK4	842	85970	kinase related, signal transduction
12697	ITGB1BP3	188	85991	-
12698	ITK	1907	86037	non-membrane spanning protein
12699	JAK2	881	86128	kinase related, see also 3454 line
12700	JAK3	2969	86246	protein tyrosine kinase
12701	JIK	999	86273	kinase related
12702	KATN1	590	86331	see also 4933 line
12703	KONJ1	346	86361	see also 165 line

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12704	KCNJ10	NM_002241.2	749	gcgcgcttgcacattcttcca	88389	-	channel	ATP-activated inward rectifier potassium channel	-
12705	KDP	NM_002253.1	4072	caagacgcgcgaatgagttact	88462	-	receptor activity, signal transduction	vascular endothelial growth factor receptor	hemangioma(血管腫)
12706	KIAA0195	NM_014738.1	1032	catctggatgctcacatgic	88469	-	see also 5927 line	-	-
12707	KIAA0703	NM_014861.1	1152	ggaggaagcgcgcacgtagtaa	88483	-	-	plasma membrane cation-transporting ATPase	-
12708	KIAA0999	NM_025164.3	3522	caacgcagcagcttatgacgcg	88564	-	-	-	-
12709	KIAA1164	NM_018092.1	675	tgactgcagcttcaattgacgg	88570	-	-	-	-
12710	KIAA1804	NM_032435.1	1917	cgactctgcgcacatcagctga	88600	-	-	kinase related	-
12711	KIAA1811	NM_032430.1	1054	gaactctctggagggaatgacg	88629	-	-	kinase related	-
12712	KIF11	NM_004523.2	245	tgacgcacattcaatgagatg	88640	-	-	microtubule motor	-
12713	KIF12	NM_138424.1	1546	cgagctctgcgcagagattgga	88737	-	-	-	-
12714	KIF13A	NM_022113.3	1854	gaggaagcgtcagattgttga	88782	-	-	-	-
12715	KIF13B	NM_015254.1	1119	aggacacctgaatgcgaattatc	88896	-	-	kinase related	-
12716	KIF14	NM_014876.1	2520	agctaaccaagccggtttasta	87042	-	-	signal transduction	-
12717	KIF1B	NM_015074.1	5186	tcactgcagctctatgctcttc	87232	-	see also 6922 line	-	-
12718	KIF2	NM_004520.1	1898	atgatctgaatctatgcttaca	87286	-	see also 3072 line	-	-
12719	KIF20A	NM_005733.1	2652	acgctgtccctttctcaatt	87335	-	see also 3976 line	-	-
12720	KIF21A	NM_017841.2	2415	asgactgcctaaagaacaatt	87407	-	-	-	-
12721	KIF25	NM_005955.2	765	cagcagcgcctgcgaacgctgg	87502	-	-	-	-
12722	KIF27	NM_017976.1	832	tgaatctccctgcgcatgtgt	87512	-	-	-	-
12723	KIF3A	NM_007094.3	1034	argctcctatcgaactcaaa	87588	-	-	motor	-
12724	KIF3B	NM_004798.2	800	cajctgcgtctctatgcattt	87630	-	-	plus-end-directed kinesin ATPase	-
12725	KIF3C	NM_002254.4	2600	atgaagaagcgcgaacatctgc	87665	-	see also 1449 line	-	-
12726	KIF3G	NM_004984.1	1033	ctgcgcagcactatcttctct	87685	-	see also 3474 line	-	-
12727	KIF3B	NM_004821.1	3068	caagatctaaactatctctctc	87800	-	see also 3075 line	-	-
12728	KIF5G	NM_004522.1	684	atggatcatccacgaatgc	87801	-	see also 2081 line	-	-
12729	KIF9	NM_022342.2	735	gcgcacattccgaactatca	87850	-	see also 8335 line	-	-
12730	KIFC2	NM_145754.2	2024	gcgcgcgcgcgcgaactaaacc	87880	-	-	-	-
12731	KIFC3	NM_005550.2	1882	cajctgcgtgcgaatctcaasig	87887	-	-	-	-
12732	KIT	NM_000222.1	2634	tgcatgcgcgtgatctcaatt	87978	-	see also 166 line	-	-
12733	KP2	NM_014916.2	1261	ctgcacatcacgaattatgt	88009	-	kinase related, phosphatase	-	-
12734	KSR2	NM_173598.2	1474	gagcagatccgcgaattgaga	88098	-	kinase related	-	-
12735	LAK	NM_025144.2	653	ctgctcaatgcctatcttaca	88109	-	-	-	-
12736	LARS	NM_020117.6	3573	tgagcagacaaatcatctctgg	88277	-	-	-	-
12737	LARS2	NM_015340.2	1469	ctgcagacacgacatcatctaa	88308	-	see also 6381 line	-	-
12738	LATS1	NM_004890.2	3276	tctgttgagctcccaatttat	88440	-	kinase related	-	-

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12739	LATS2	NM_014572.1	2552	ctggtggtcaactctctact	88477	-	kinase related, cell cycle, signal transduction	-
12740	LOK	NM_005358.2	106	ctgtatgaagactgcattatcc	88490	-	protein tyrosine kinase	-
12741	LMK1	NM_002314.2	982	ctgaactctcgcgtactatccc	88516	-	see also 1488 line	-
12742	LMK2	NM_005366.2	1461	tggccattttactctatctgccc	88537	-	kinase related	-
12743	LOK1570	NM_145248.2	1532	tcctgcctcgcgcgcacaaagt	88555	-	see also 9783 line	-
12744	LOG1614	NM_138458.1	1115	cctgcctgcgcgcgcgcgcgcgc	88582	-	see also 9623 line	-
12745	LOC20038	NM_145299.1	757	ccctcctcgcgcgcgcgcgcgcgc	88633	-	-	-
12746	LOC34037	NM_178964.2	1200	tggaaactcaccctcgcgcgcgcgc	88664	-	-	-
12747	LOC84643	NM_032559.2	1087	cggaagcgcgcgcgcgcgcgcgcgc	88671	-	kinase related	-
12748	LOC91807	NM_182493.1	2059	cgagcactcaatcaatgaatcatt	88696	-	-	-
12749	LOC91882	NM_052858.1	1074	caagcctctaccacaaagcaaggt	88715	-	-	-
12750	LOC92935	NM_138395.1	1413	agctatgcgcgcgcgcgcgcgcgc	88737	-	see also 9040 line	-
12751	LONP	NM_031490.2	2525	aggtcaactctacgcgcgcgcgcgc	88805	-	receptor activity, kinase related, signal transduction	-
12752	LTK	NM_002344.1	1557	ctttatgaagacgcgcgcgcgcgcgc	88819	-	receptor signaling protein tyrosine kinase	-
12753	LYK5	NM_153335.3	450	acctctactctgcgcgcgcgcgcgcgc	88831	-	see also 9888 line	-
12754	LYN	NM_002350.1	1755	ggatcaacactctgcgcgcgcgcgcgc	88888	-	kinase related	-
12755	MAK	NM_005906.3	797	atgcctgaactctatgcgcgcgcgcgc	88908	-	protein serine/threonine kinase	-
12756	MAP2K1	NM_002755.2	743	tgggcacgaagctcgcgcgcgcgcgc	88945	-	see also 1798 line	-
12757	MAP2K2	NM_030862.2	670	gtgaacggagatgcgcgcgcgcgcgc	88959	-	kinase related	-
12758	MAP2K3	NM_002758.2	595	gtgcacgcgcgcgcgcgcgcgcgcgc	88968	-	see also 1799 line	-
12759	MAP2K5	NM_002757.2	1307	gtgcgcgcgcgcgcgcgcgcgcgcgc	88995	-	see also 1801 line	-
12760	MAP2K6	NM_002758.2	587	cgcgcgcgcgcgcgcgcgcgcgcgcgc	89025	-	cell cycle, signal transduction	-
12761	MAP2K7	NM_145185.2	496	acctctatgcgcgcgcgcgcgcgcgcgc	89053	-	-	-
12762	MAP3K10	NM_002446.2	1227	tggcctgcgcgcgcgcgcgcgcgcgcgc	89062	-	kinase related, signal transduction apoptosis	-
12763	MAP3K11	NM_002419.2	2277	atgactcactccctctgcgcgcgcgcgc	89069	-	kinase related	-
12764	MAP3K12	NM_006301.2	1472	caagcgcgcgcgcgcgcgcgcgcgcgc	89084	-	see also 4392 line	-
12765	MAP3K13	NM_004721.3	1659	agactcgcgcgcgcgcgcgcgcgcgcgc	89128	-	kinase related, signal transduction	-
12766	MAP3K14	NM_003954.1	1520	atgctgcgcgcgcgcgcgcgcgcgcgc	89168	-	see also 2701 line	-
12767	MAP3K3	NM_002401.2	1619	acpctcgcgcgcgcgcgcgcgcgcgcgc	89276	-	kinase related	-

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12768	MAP3K4	NM_005922.1	1809	ggagcagctatagattgttaag	88338	-	see also 4139 line	-	-
12769	MAP3K5	NM_005923.3	1262	catctacatattatctatgaagt	89452	-	see also 4141 line	-	-
12770	MAP3K6	NM_004672.2	805	cgccagctgctgctatctaca	89535	-	see also 3207 line	-	-
12771	MAP3K7	NM_003188.2	744	atgcaaccacaacgcgtacttca	89568	-	kinase related, signal transduction	-	protein serine/threonine kinase
12772	MAP3K8	NM_005904.2	2073	gggacaccacaacgttgatattg	89629	-	kinase related	-	-
12773	MAP4K1	NM_007181.2	75	cgccagctatgggaagctcttta	89631	-	kinase related	-	-
12774	MAP4K2	NM_004579.2	1685	ctgctctctctgctgacacacg	89663	-	kinase related	-	-
12775	MAP4K3	NM_003618.2	2352	ttggagcgtcaatctacaactct	89732	-	kinase related	-	-
12776	MAP4K5	NM_006575.3	2380	tgctctgctgactctatgacaaa	89793	-	see also 4608 line	-	-
12777	MAPK1	NM_002745.2	383	aattcttgctgactctacagaaa	89815	-	see also 1787 line	-	-
12778	MAPK10	NM_002753.2	1179	caatcgactctcgacacaaataa	89858	-	kinase related, signal transduction	-	-
12779	MAPK11	NM_002751.4	451	gactcgactgactcactcaattcc	89867	-	kinase related, signal transduction	-	-
12780	MAPK12	NM_002969.2	1326	atggaagcgtgcttacttacaag	89873	-	cell cycle, signal transduction	-	SAP kinase 3
12781	MAPK13	NM_002754.3	1082	caagccttgatgcttctcttapa	89881	-	kinase related, cell cycle	-	MAP kinase
12782	MAPK14	NM_001315.1	888	tggggcagatctgacacacatt	89892	-	kinase related, signal transduction	-	-
12783	MAPK3	NM_002745.1	992	tggacccatgataaacttaaac	89928	-	-	-	-
12784	MAPK4	NM_002747.2	1007	aaagctgctgactgacttact	89935	-	see also 1788 line	-	-
12785	MAPK6	NM_002748.2	1884	ttggctctgacacacacacttg	89971	-	see also 1789 line	-	-
12786	MAPK7	NM_002749.2	2277	ttggcccccagcagctatcttaag	90026	-	see also 1790 line	-	-
12787	MAPK8	NM_002750.2	571	atgtatgactgctctctctacaga	90048	-	see also 1791 line	-	-
12788	MAPK9	NM_002752.3	568	ccggacagctgcttacttaactaa	90082	-	see also 1795 line	-	-
12789	MAPKAPK	NM_004759.3	944	ttgacacactcttataccacc	90108	-	kinase related	-	-
12790	MAPKAPK	NM_004635.3	715	ctctatctctctatattgagc	90126	-	see also 3149 line	-	-
12791	MAPKAPK	NM_003669.2	1574	tggatggcttgctgattcacaga	90164	-	see also 2496 line	-	-
12792	MAPK1	NM_018950.2	2392	gacgacgacagctgctctataa	90221	-	see also 7536 line	-	-
12793	MAPK2	NM_004954.2	1302	atgtgtctctcaattgattatacag	90244	-	kinase related	-	-
12794	MAPK4	NM_003147.2	954	gaagatttgaagcactaacacaga	90325	-	see also 8016 line	-	-
12795	MAS1205	NM_015112.1	2972	gttatgtctctctctgagatatt	90371	-	see also 8250 line	-	-
12796	MAT1A	NM_000429.1	597	ctctcggcctgctctctaacttca	90388	-	-	methionine adenosyltransferase	hypermethioninemia(高メチオニン血症)
12797	MAT2A	NM_005911.3	547	aggatgctgctcttcaacttt	90405	-	-	methionine adenosyltransferase	-
12798	MATK	NM_002978.2	1117	tgcctctgaatattatcagatgt	90425	-	see also 1531 line	-	-
12799	MCCG1	NM_020165.2	1817	tactctatgctgacgactgaac	90479	-	see also 7778 line	-	-
12800	MDN1	NM_014611.1	8432	gagcagctgctcttctgacc	90550	-	see also 5779 line	-	-

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12801	MELK	NM_014791.1	502	Hgctctccacgaatgact	90857	-	kinase related	-
12802	MEIK1	NM_006343.1	1579	ctcaccacatgaggaattat	90854	-	see also 4437 line	-
12803	MGC13186	NM_032324.1	220	ggagagagagagagagagat	91130	-	-	-
12804	MGC14550	NM_016301.2	628	ggagagagagagagagagat	91155	-	-	-
12805	MGC18189	NM_033115.2	1406	ctgagagagagagagagagat	91187	-	kinase related	-
12806	MGC25688	NM_145001.1	365	ggagagagagagagagagat	91233	-	kinase related	-
12807	MGC2599	NM_032116.2	471	ggagagagagagagagagat	91242	-	see also 9075 line	-
12808	MGC2744	NM_032587.2	1062	ctggagagagagagagagat	91266	-	-	-
12809	MGC33182	NM_145203.2	1171	cgagagagagagagagagat	91300	-	kinase related,	-
12810	MGC42105	NM_153361.2	1226	ggagagagagagagagagat	91303	-	signal transduction	-
12811	MGC45428	NM_152619.1	1149	ggagagagagagagagagat	91357	-	kinase related	-
12812	MGC4796	NM_032017.1	1028	ggagagagagagagagagat	91387	-	see also 8905 line	-
12813	MGC5347	NM_024065.1	1392	ggagagagagagagagagat	91404	-	kinase related	-
12814	MGC8407	NM_024046.2	1580	cgagagagagagagagagat	91448	-	see also 8578 line	-
12815	MKOR1	NM_020778.1	5448	ggagagagagagagagagat	91482	-	see also 7962 line	-
12816	MK67	NM_002417.2	9612	ggagagagagagagagagat	91562	-	cell cycle	ATP binding
12817	MKNS	NM_018844.2	1345	ggagagagagagagagagat	91602	-	see also 7603 line	breast cancer(乳癌), prostate cancer(前立腺癌)
12818	MKNK1	NM_003884.3	335	ggagagagagagagagagat	91651	-	kinase related	-
12819	MKNK2	NM_017572.2	965	ggagagagagagagagagat	91654	-	kinase related	-
12820	MLH1	NM_000249.2	686	ggagagagagagagagagat	91686	-	see also 182 line	-
12821	MORG	NM_014429.1	1715	ggagagagagagagagagat	91766	-	see also 5675 line	-
12822	MOS	NM_005372.1	207	ggagagagagagagagagat	91794	-	kinase related,	protein kinase CK2
12823	MOV10	NM_020965.1	167	ggagagagagagagagagat	91808	-	cell cycle	-
12824	MPHOSPH	NM_016195.1	4621	ggagagagagagagagagat	91962	-	see also 8032 line	-
12825	MST1R	NM_002447.1	139	ggagagagagagagagagat	91990	-	receptor activity,	macrophage colony
12826	MST4	NM_016542.2	1192	ggagagagagagagagagat	92065	-	kinase related,	stimulating factor
12827	MT	NM_014807.1	386	ctggagagagagagagagat	92074	-	see also 6908 line	receptor
12828	MTHFD1	NM_005956.2	1012	ggagagagagagagagagat	92112	-	-	-
12829	MUSK	NM_005592.1	47	ggagagagagagagagagat	92149	-	see also 4162 line	-
12830	MVD	NM_002461.1	76	ctggagagagagagagagat	92188	-	see also 3882 line	diphosphomevalonate decarboxylase
12831	MVK	NM_000431.1	452	ctggagagagagagagagat	92199	-	kinase related	familial periodic fever(家族性周期性発熱), mevalonic aciduria(メバロン酸尿症)
12832	MYH1	NM_005963.2	811	ctggagagagagagagagat	92204	-	-	hyperimmunoglobulinemia D(高免疫グロブリン血症)
12833	MYH11	NM_002474.1	3743	ggagagagagagagagagat	92232	-	muscle motor	muscle motor
12834	MYH13	NM_003802.1	3846	ggagagagagagagagagat	92260	-	muscle motor	muscle motor
12835	MYH2	NM_017534.1	4575	ggagagagagagagagagat	92302	-	-	-
12836	MYH3	NM_002470.1	3791	ggagagagagagagagagat	92322	-	-	myosin ATPase

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12837	MYH4	NM_017533.1	1334	acgttcgcaatgagttcgaacc	92343	myosin ATPase	-
12838	MYH6	NM_002471.1	3318	aagaagaggtttacattatca	92371	Thyroid hormone receptor beta-2 structural constituent of muscle	-
12839	MYH7	NM_000257.1	1961	tggagctgatgcctcatctaga	92382	cardiomyopathy(アノール性心筋症)	-
12840	MYH8	NM_002472.1	249	gagggaaagataactaaagact	92397	structural constituent of muscle	-
12841	MYH9	NM_002473.2	2212	caagctctctcgcctcttctgataa	92439	cochleasacculer degeneration(蝸牛管軟化)	-
12842	MYLK	NM_005963.2	3194	ggagcggagactctctcttaatt	92486	see also 4168 line	-
12843	MYLK2	NM_003118.2	1367	atgacaactctctatgataca	92509	kinase related	-
12844	MYO10	NM_017233.1	6230	ggagccacctctgagaaatcattat	92625	see also 5295 line	-
12845	MYO15A	NM_016239.2	7172	tggcagcactatctctctgagacc	92678	see also 6746 line	-
12846	MYO18B	NM_032608.4	7911	acagcagttctgcgatactatg	92761	myosin ATPase	-
12847	MYO1A	NM_005379.2	892	aagcttgagcagctgatacactgg	92772	motor	-
12848	MYO1C	NM_033375.1	1952	tgcgcgaatactgagactttcc	92845	see also 3483 line	-
12849	MYO1E	NM_004988.1	1098	ggctctacaagcttgatgaca	92874	motor	-
12850	MYO1F	NM_012335.2	590	ctgtgcgacaacattccagc	92932	see also 7004 line	-
12851	MYO3A	NM_017433.3	2482	ctgcccctcttgatattgtto	93014	see also 201 line	-
12852	MYO3B	NM_138995.1	262	atgctacaagaagatacaacag	93074	see also 205 line	-
12853	MYO5A	NM_000259.1	2371	caagcctgactctctctcaatga	93191	see also 4834 line	-
12854	MYO5C	NM_018728.1	2653	caagcagttctctctcaatga	93255	see also 2793 line	-
12855	MYO6	NM_004999.1	348	aaacacacactgccaatcattc	93378	see also 7035 line	-
12856	MYO7A	NM_000260.1	1450	acgtgcgagagcctctctaaag	93493	signal transduction	-
12857	MYO9A	NM_006901.1	4957	atgactgagctctctatcatta	93679	apoptosis	-
12858	MYO9B	NM_004145.2	4444	agaagcagcaatctgaagattgg	93781	ATP binding	-
12859	NADSYN1	NM_018161.3	2091	ggatttgatctgcgacattctt	93812	see also 4834 line	-
12860	NAGK	NM_017568.1	601	cgatgctgagctgactcattact	93823	see also 2793 line	-
12861	NALP1	NM_014822.2	3886	gcattgactcttgatgattt	93872	see also 7035 line	-
12862	NALP11	NM_145000.1	2157	tcptatgcacttgatgattt	93951	see also 7035 line	-
12863	NALP12	NM_035291.1	1488	cgctgcagagcgtgctgattcc	93991	signal transduction	-
12864	NALP2	NM_017655.1	1845	gcctgctgactatgatttaagc	94032	apoptosis	-
12865	NALP5	NM_153447.2	2501	tggcgaactctgacttaagcttc	94099	ATP binding	-
12866	NALP6	NM_138329.1	525	gcctgctgactatgatttaagc	94125	see also 4834 line	-
12867	NALP7	NM_139176.1	1975	aagctgactatgatttaagc	94203	see also 7877 line	-
12868	NALP8	NM_020443.2	4859	tgcctctgagctgacttaagc	94243	see also 7877 line	-
12869	NAV1	NM_145117.2	2623	gcattgctgactgactcattact	94363	see also 7877 line	-
12870	NAV3	NM_014803.2	2340	caattgctgactgactcattact	94363	see also 7877 line	-
12871	NDUFA10	NM_004544.2	147	caagcctgctgagaaattcattag	94474	NADH dehydrogenase (ubiquinone)	-
12872	NEK11	NM_024900.2	750	agaagctactctgcgaactttaa	94503	see also 7877 line	-

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12873	NEK2	NM_002497.1	218	gaatataagcaaatatgatttt	94548	-	kinase related, cell cycle	protein kinase CK2	-
12874	NEK3	NM_002498.1	969	caatcaatgcctctcttaact	94594	-	kinase related, cell cycle	-	-
12875	NEK4	NM_003157.1	497	caatcaatgcctctcttaact	94616	-	kinase related	protein kinase CK2	-
12876	NEK6	NM_014397.3	959	gaatcaatgcctctcttaact	94686	-	kinase related	-	-
12877	NEK7	NM_133494.1	393	cttgcgaatgcctctcttaact	94698	-	kinase related	-	-
12878	NEK8	NM_178170.2	491	ttgcgaatgcctctcttaact	94723	-	see also 9589 line	-	-
12879	NEK9	NM_003119.3	286	actgcgaatgcctctcttaact	94734	-	see also 9363 line	-	-
12880	NLK	NM_018231.1	1322	agctgcgaatgcctctcttaact	94825	-	see also 8733 line	-	-
12881	NME1	NM_000269.2	229	atgcgaatgcctctcttaact	94846	-	kinase related, cell cycle	nucleoside- diphosphate kinase	neuroblastoma(神経芽細胞腫), melanoma(メラノーマ), testicular cancer(嚢丸癌)
12882	NME3	NM_002513.2	663	cttgcgaatgcctctcttaact	94852	-	kinase related, apoptosis	nucleoside- diphosphate kinase	-
12883	NME4	NM_005009.2	356	atgcctcttgcgaatgcctcttaact	94853	-	kinase related	nucleoside- diphosphate kinase	-
12884	NME5	NM_003551.2	314	ttgcgaatgcctctcttaact	94859	-	see also 2364 line	diphosphate kinase	-
12885	NME7	NM_013330.3	465	ttgcgaatgcctctcttaact	94893	-	kinase related	-	-
12886	NOLC1	NM_004741.1	1864	agctcttgcgaatgcctcttaact	94927	-	cell cycle	GTP binding	-
12887	NPR2	NM_000907.1	1328	ttgcgaatgcctctcttaact	94950	-	see also 588 line	-	-
12888	NRPB	NM_013392.1	1617	ctgcgaatgcctctcttaact	95011	-	see also 5425 line	-	-
12889	NSF	NM_006178.1	2125	aagcgaatgcctctcttaact	95060	-	see also 4271 line	-	-
12890	NTRK1	NM_002529.2	1323	atgcgaatgcctctcttaact	95069	-	receptor activity, kinase related, signal transduction	neurotrophin TRKA receptor	thyroid cancer(甲状腺癌), papillary thyroid carcinoma(甲状腺乳頭癌), medullary thyroid carcinoma(髄質中状腺癌), neuroblastoma(神経芽細胞腫), neuropathy(ニューロパシー)
12891	NTRK2	NM_006180.2	1420	catgcctctcttgcctcttaact	95101	-	see also 4274 line	-	-
12892	NTRK3	NM_002530.1	1526	tcgcgaatgcctctcttaact	95146	-	kinase related, receptor activity, signal transduction	neurotrophin TRKC receptor	neuroblastoma(神経芽細胞腫), infantile fibrosarcoma(乳原線維肉腫)
12893	NUBP1	NM_002484.1	264	ttgcctctcttgcgaatgcctcttaact	95159	-	see also 1631 line	-	-
12894	NVL	NM_002535.1	1738	gggaatgcctctcttgcgaatgcctcttaact	95190	-	see also 1631 line	-	-
12895	OSR1	NM_005109.1	934	atgcgaatgcctctcttgcgaatgcctcttaact	95242	-	kinase related	-	-
12896	P2RX1	NM_002558.2	576	cgacttgcctctcttgcgaatgcctcttaact	95274	-	see also 1648 line	-	-
12897	P2RX2	NM_012226.3	252	ttgcgaatgcctctcttgcgaatgcctcttaact	95287	-	receptor activity, channel	-	-
12898	P2RX3	NM_002559.2	146	gggaatgcctctcttgcgaatgcctcttaact	95297	-	receptor activity, channel	ATP-gated cation channel	-
12899	P2RX4	NM_002560.2	1149	gggaatgcctctcttgcgaatgcctcttaact	95329	-	receptor activity, channel	-	-
12900	P2RX5	NM_002561.2	761	caatgcctctcttgcgaatgcctcttaact	95341	-	receptor activity, channel	-	-

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12901	P2RX7	NM_002566.4	1224	ctctgctgcacgaataact	95386	-	receptor activity, channel, signal transduction	-
12902	P2RX1	NM_005446.2	696	ctcgcctgcatacaacaattca	95402	-	receptor activity, channel,	transmembrane receptor
12903	PAK1	NM_002576.2	1182	ggcgcctcctcaagaagaata	95484	-	signal transduction	-
12904	PAK2	NM_002577.2	688	ccctcacacgatacacgaatc	95477	-	kinase related,	protein tyrosine kinase
12905	PAK3	NM_002578.1	1411	ttctctctgacccactatgg	95522	-	signal transduction	-
12906	PAK4	NM_005884.2	1704	ctgtgcctggcggaatgtga	95525	-	see also 1688 line	protein serine/threonine kinase
12907	PAK6	NM_020168.3	950	ctgcacccctgcagcaacacg	95526	-	kinase related,	-
12908	PAK7	NM_020341.2	1010	ctgcgatactacacacatttg	95547	-	kinase related	-
12909	PANK1	NM_138316.2	910	ctcgccttgaaatgaacaaag	95593	-	see also 7838 line	-
12910	PANK3	NM_024594.2	765	tgacaaacccagactctattt	95642	-	see also 9586 line	-
12911	PANK4	NM_018216.1	125	tcgaatacggcggctgttaacc	95661	-	see also 8657 line	-
12912	PAPSS1	NM_005443.3	292	ctcgaatgtgcacataattgca	95889	-	see also 7323 line	sulfate adenyltransferase (ATP)
12913	PAPSS2	NM_004670.2	350	atgctgcctcagctcttaccaga	95730	-	kinase related	-
12914	PASK	NM_015148.2	526	tgcttctcacgaacaaatggc	95784	-	see also 3182 line	-
12915	PC	NM_000920.2	2769	tgacacactgcagcgtgtgaa	95836	-	kinase related,	-
12916	PCOA	NM_000282.1	731	tgccgatacgaactactata	95864	-	signal transduction	-
12917	PCOLCE	NM_013363.2	974	ggattttgtcctcctctatt	95931	-	see also 597 line	-
12918	PCTK1	NM_006201.2	843	ccctctgtctcagctctctgaa	95946	-	see also 246 line	-
12919	PCTK2	NM_002585.2	867	tgctcgaacatgatacacta	95974	-	see also 5409 line	-
12920	PCTK3	NM_002586.1	1280	gactactcacccctcctgtat	96009	-	see also 4297 line	-
12921	PDGFRA	NM_006206.2	2539	aagcacacagcagcttgtattt	96041	-	see also 1679 line	platelet-derived growth factor, signal transduction
12922	PDGFRB	NM_002600.2	3404	ggcttcacacgaataatactcc	96101	-	kinase related	alpha-receptor
12923	PDK1	NM_002610.3	1186	agccttttcacaaactctcc	96139	-	see also 1687 line	-
12924	PDK2	NM_002611.3	1161	ggacacactctctctctctct	96147	-	see also 1688 line	-
12925	PDK3	NM_005391.1	183	ctgcgcgcctcacacaag	96155	-	see also 1689 line	-
12926	PDK4	NM_002612.2	1108	ttgaacgcctcttttgtatca	96222	-	see also 3760 line	pyruvate dehydrogenase (isomeric) kinase
12927	PDPK1	NM_002613.1	808	tggaacagcgcgaactctct	96240	-	kinase related,	diabetes mellitus (糖尿病), diabetes (糖尿病)
12928	PDZK3	NM_015022.2	1385	gggaacatctgcgcgaatgg	96270	-	signal transduction	protein tyrosine kinase
12929	PEX1	NM_000466.1	495	tgctgtgtgcacaacactca	96384	-	-	-
						-	see also 374 line	-

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12930	PEX6	NM_000287.2	2911	aagccacatcagccagcaatttgc	96508	-	-	peroxisome biogenesis disorder (ベルオキソノミー)
12931	PFAS	NM_012393.1	3794	atccacagagagagcttgcagc	96540	-	-	ムンタウゼー病, Zellweger syndrome (ツェルウェー)
12932	PFKFB1	NM_002825.1	330	agccatgaagctcaagaactat	96559	-	kinase, related, phosphatase	-
12933	PFKFB2	NM_006212.1	1149	aagctactgtctgatactctg	96603	-	kinase, related, phosphatase	-
12934	PFKFB3	NM_004566.1	574	gtctgagccacactcagctgt	96612	-	fructose-2, 6-bisphosphate 2-phosphatase	-
12935	PFKFB4	NM_004567.2	426	ctgagagccgacctcttattt	96637	-	fructose-2, 6-bisphosphate 2-phosphatase	-
12936	PFTK1	NM_012395.2	862	catgacacagggaggttaaacg	96663	-	see also 3106 line	-
12937	PHKG1	NM_006213.2	1071	tggcttcatgctgactactac	96681	-	protein tyrosine kinase	-
12938	PHKG2	NM_000294.1	674	tatgcccagagatctctaattgc	96687	-	protein tyrosine kinase	orthosis due to liver phosphorylase kinase deficiency (肝障害, glycogenosis (糖原病))
12939	PHK3R4	NM_014802.1	1868	aaagagttctctgaatgatac	96744	-	kinase, related	-
12940	PM1	NM_002648.2	656	cgagttctccagcgtctttagc	96826	-	kinase, related	-
12941	PINK1	NM_032408.1	1027	cgagacactctctctttagc	96838	-	see also 5184 line	-
12942	PKE	NM_173576.2	1366	catgctcgagatgactacttca	96859	-	kinase, related, cell cycle	-
12943	PKMYT1	NM_004203.3	1141	algtcaagctctcacaactcttc	96865	-	-	-
12944	PLK	NM_005030.3	552	ctgcacccaacagcagatattca	96870	-	kinase, related, cell cycle	protein serine/threonine kinase
12945	PP13	NM_013266.2	313	atgctactactatcattacaatg	96887	-	-	-
12946	PRKAA2	NM_006252.1	528	tatgcagattctggatctaat	96901	-	kinase, related, signal transduction	protein tyrosine kinase
12947	PRKAA	NM_002730.2	1056	atggagttcaagctatcaagaac	96955	-	kinase, related	protein tyrosine kinase
12948	PRKAOB	NM_002731.1	715	gggcattaggtgtctaatctat	96980	-	kinase, related, signal transduction	protein tyrosine kinase
12949	PRKAO3	NM_002732.2	860	acggagttgcagcagcatcaaac	97005	-	kinase, related	protein tyrosine kinase
12950	PRKGA	NM_002737.1	429	ctgagatagacattctcaagc	97011	-	see also 1774 line	-
12951	PRKGB1	NM_002738.4	1899	ctgaagcagagcgtgattctaac	97063	-	see also 1775 line	-
12952	PRKCD	NM_006254.2	1065	cagcttcaagttcacacactca	97080	-	kinase, related, apoptosis	protein tyrosine kinase
12953	PRKCE	NM_005400.1	1531	tgagctcttcaagttctatg	97117	-	-	protein kinase C

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12954	PRKCG	NM_002739.2	408	tcacgagtcacggaattgag	97128	-	kinase related	protein tyrosine kinase	-
12955	PRKGH	NM_006953.2	1432	ccactgttgttgaactttc	97177	-	see also 4397 line	-	retinitis pigmentosa (色素性網膜炎)
12956	PRKCI	NM_002740.3	776	ttccataaactctccactg	97225	-	see also 1776 line	-	-
12957	PRKCL1	NM_002741.1	1593	gcctgcacgagcaagacatg	97253	-	kinase related, signal transduction	protein serine/threonine kinase	-
12958	PRKCL2	NM_006356.1	1137	aaagcagtgatgcgaattcttc	97313	-	see also 4341 line	-	-
12959	PRKCN	NM_005815.2	2792	aaagtcctcagagcaagatgac	97481	-	see also 4056 line	-	-
12960	PRKCQ	NM_006251.1	78	ttgcacagagctgagctgttacc	97496	-	see also 4343 line	-	-
12961	PRKD2	NM_016457.2	291	ttgctcttcgctctttctgcaca	97545	-	kinase related	protein serine/threonine kinase	-
12962	PRKG1	NM_006259.1	671	ttggccatgtctgcacagctttt	97578	-	see also 4344 line	-	-
12963	PRKG2	NM_006259.1	1261	atgcgaagctgcagctgctaac	97641	-	see also 4348 line	-	-
12964	PRKWNK1	NM_018879.1	1823	ctctgcacgagcagctacttc	97697	-	see also 7630 line	-	-
12965	PRKWNK2	NM_006846.3	3664	ggagcagccagctgaattctc	97827	-	kinase related	-	-
12966	PRKWNK3	NM_020922.1	2603	ttatctgtgcagctgctgtatc	97911	-	kinase related	-	-
12967	PRKWNK4	NM_032387.2	2223	caaacgctgctgagagatctac	98014	-	see also 9179 line	-	-
12968	PRK2000	NM_014109.2	1224	gaagctaaagagagctacata	98054	-	see also 5494 line	-	-
12969	PRPF4B	NM_003913.3	2692	ttgacccctatacgaactctata	98232	-	see also 2669 line	serine-type endopeptidase	-
12970	PRSS15	NM_004793.2	521	atctcgcctctttctaaagaga	98244	-	-	-	-
12971	PSK	NM_016151.1	893	ccggagatctcgaagatgagg	98298	-	kinase related, apoptosis	-	-
12972	PSK41	NM_006749.1	395	aaagttgacccagctgttcagc	98286	-	see also 4764 line	-	-
12973	PSK42	NM_033126.1	339	atgggtatgacatcgttatctg	98285	-	kinase related	-	-
12974	PSMC1	NM_028062.2	1033	atggcccaaacagagagaagac	98311	-	-	proteasome	-
12975	PSMC2	NM_028062.2	773	atgctctatctcgtgttttg	98336	-	see also 1819 line	-	-
12976	PSMC3	NM_028064.3	1197	ccpctcttaccgcagatgagt	98373	-	see also 1820 line	-	-
12977	PSMC4	NM_006502.2	267	aggagctaaagcgaattccaagc	98375	-	-	-	-
12978	PSMC5	NM_002605.4	660	aagagctatctctttcttctg	98410	-	see also 1821 line	-	-
12979	PTK2	NM_005607.3	740	tagaatacgcgtcactactg	98459	-	see also 3893 line	-	-
12980	PTK2B	NM_004103.3	2403	tcgtctcccatcaatgatgt	98549	-	see also 2772 line	non-membrane spanning protein tyrosine kinase	-
12981	PTK6	NM_005975.2	260	gaattcgagaccgtgtttcttgc	98559	-	kinase related, receptor activity, kinase related	-	-
12982	PTK7	NM_002821.3	3012	caatgcacagagcaagtgaagc	98587	-	signal transduction	-	-
12983	PTOV1	NM_017432.2	1178	atctgaagatccctctctatgc	98591	-	-	-	-
12984	PXK	NM_017771.2	617	agaaagcgtcaatgaatcgcg	98611	-	see also 7151 line	-	-
12985	QARS	NM_005051.1	1252	taagctatcagctgaattatata	98662	-	-	glutamine-tRNA ligase	-

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12986	IRAD50	NM_005732.2	1932	cagagcccttgcaacttgacc	98742	-	see also 3973 line	
12987	RAF1	NM_002880.1	455	aagcagcgttgattgattact	98834	-	see also 1921 line	
12988	RAGE	NM_014226.1	754	tggtgtctacagtcacaaatg	98892	-	see also 5541 line	
12989	RAIISL	NM_020320.2	1556	aggttgacggagtgctttatg	98950	-	-	
12990	RET	NM_000323.2	1237	cggtgcacgttcacatgactag	98967	-	see also 273 line	
12991						-	kinase, related,	G-protein-coupled
12991	RHOK	NM_002929.1	1343	ccgttaagtaacctgaattgctc	99009	-	receptor activity,	receptor
12992	RICH1	NM_018054.3	176	ctgacacagctgcgcgtcaatg	99014	-	signal transduction	phosphorylating
12993	RICK1	NM_031480.2	1254	ttgcgcacagctcaatgctttct	99089	-	see also 7218 line	protein kinase
12994						-	kinase related,	Quichi disease(小口病)
12994	RIPK1	NM_003804.2	1823	ttgcacgttcacattatgagga	99147	-	apoptosis,	
12995	RIPK2	NM_003821.4	1038	tcacacagctatgctctctaatg	99180	-	signal transduction	
12996	ROCK1	NM_005406.1	2479	caactctgacaaacagatagag	99264	-	see also 2803 line	protein tyrosine
12997	ROCK2	NM_004802.2	2165	ctcgcgaacagctctgatactgc	99322	-	see also 3172 line	kinase
12998	RORI	NM_005072.1	1109	ggcagctgctgcgcgtgaatt	99415	-	see also 3384 line	
12999						-	see also 3506 line	
12999	ROR2	NM_004560.2	757	tggcacacggacacattttgtgg	99471	-	receptor activity,	transmembrane
13000	ROSI	NM_002944.2	3615	atgctgcagctgcgaagtctaca	99594	-	kinase related,	receptor protein
13001	RP2	NM_006915.1	1102	atgtcaactattgttaacagaga	99728	-	signal transduction	tyrosine kinase
13002	RP56KA1	NM_002953.2	1398	tatgtgcgcgtctacgttgaaagg	99741	-	see also 1986 line	
13003	RP56KA2	NM_002135.3	1931	ctgtctacacggcccaattctgtg	99761	-	kinase, related,	protein tyrosine
13004	RP56KA3	NM_004586.1	2077	caggtgtaccacacatctgtgaaa	99814	-	signal transduction	kinase
13005						-	see also 3120 line	
13005	RP56KA4	NM_003942.1	1850	ggcgtctattctgacatgctgc	99829	-	kinase, related,	transcription_regulat
13006	RP56KA5	NM_004755.2	309	ctcgcacgtctcaatttgacagg	99832	-	or	
13007	RP56KA8	NM_014496.1	1491	ttatgcgtctatgacacacatcc	99918	-	see also 3273 line	
13008	RP56KB1	NM_003161.1	737	ttgactatgcacaaagatcattt	99952	-	see also 5720 line	
13009						-	see also 2134 line	
13009	RP56KB2	NM_003952.1	1112	aggcctgcacacagctttgtaacc	99968	-	kinase related,	protein
13010	RP56KB3	NM_012424.2	2417	ttatgcctcaacatctatgataa	100039	-	signal transduction	serine/threonine
13011	RP56KL1	NM_031464.2	818	caggtgtctcctgcgcattctgg	100077	-	, cell cycle	kinase
13012						-	kinase related	
13012	RUVBL1	NM_003707.1	215	gaagc-tdt-ggcgtctagtataga	100083	-	transcription_regulat	or
13013	RUVBL2	NM_006866.1	747	acgtgatgatgcgtcatcactct	100119	-	transcription_regulat	or
13013						-	or	structural molecule

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13049	STK22C	NM_052841.2	859	ccgcgcctcaattgaagattta	101575	-	kinase related	-
13050	STK23	NM_014370.1	232	aaatgcagcagctcttcacga	101576	-	kinase related	protein kinase CK2
13051	STK24	NM_003576.2	492	gaagctccagcagctatctatta	101603	-	see also 2373 line	-
13052	STK25	NM_006374.3	313	agctctcaaaagcagctcagac	101628	-	kinase related, signal transduction	protein tyrosine kinase
13053	STK29	NM_003957.1	2143	agctctcagctccagcttgatctc	101643	-	kinase related	-
13054	STK3	NM_006281.1	243	agggctctatgcagcttgatctc	101648	-	see also 4373 line	-
13055	STK33	NM_003006.1	1840	gaagctatgcctcagcttgatctc	101721	-	kinase related	-
13056	STK36	NM_015690.2	576	ccgcctctccacacccagatctga	101759	-	kinase related	-
13057	STK38	NM_007271.2	596	tggctgaagctagctcttcttcaga	101809	-	see also 5071 line	-
13058	STK38L	NM_015000.1	1327	gtttctgaactggagacacaaagg	101851	-	see also 6174 line	-
13059	STK39	NM_013233.1	985	gaacagcgcctctctacaaatatt	101879	-	kinase related	receptor signaling protein serine/threonine kinase
13060	STK4	NM_006282.2	1379	atggagctacagcttcttcttaag	101947	-	see also 4374 line	-
13061	STK6	NM_003600.2	1096	ctctcttcattgagagagcttcttc	101957	-	-	-
13062	SYK	NM_003177.3	2020	cgctctctctcactactactatga	102001	-	kinase related, signal transduction	protein tyrosine kinase
13063	SYN3	NM_003490.2	1043	tgcacagctgctctggaagctgttt	102013	-	-	-
13064	TAP1	NM_000593.4	1078	gtgacagagatctatacacaccc	102027	-	-	oligopeptide transporter
13065	TAP2	NM_000544.2	137	tggctacacgcctctctctctgag	102044	-	-	-
13066	TAR5	NM_152295.3	636	cgagcaacatccgcttcttctctata	102076	-	see also 9832 line	-
13067	TBK1	NM_0113254.2	1128	gaagcagcagcttgatcttgagacc	102159	-	kinase related	-
13068	TCEB3L2	NM_145855.1	1329	cgctccagacagacaaagctgatct	102189	-	transcription, regulation	-
13069	TCP1	NM_030752.1	1132	acgtctgcagctgcttctctacgt	102215	-	see also 8925 line	-
13070	TEC	NM_003215.1	1882	tggctgtccactatctgtatga	102275	-	kinase related	non-membrane spanning protein tyrosine kinase
13071	TEK	NM_000459.1	708	gaagctactctgcgcagctgatata	102300	-	see also 358 line	-
13072	TESK1	NM_006285.1	1801	caagacccgcctctcantaacaatt	102383	-	kinase related	protein tyrosine kinase
13073	TESK2	NM_007170.1	1107	caagcgcgtccgacatctctcc	102402	-	apoptosis	-
13074	TEX14	NM_031272.2	1611	aagatctacgctatctattcttaag	102452	-	see also 8999 line	-
13075	TGFBR1	NM_004612.1	1221	aagttctcagtgattccataaatt	102550	-	see also 3133 line	-

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13076	TGFBR2	NM_003242.3	2008	ctgaagaagcgtccctaaacact	102584	-	receptor activity, signal transduction kinase related	type II transforming growth factor- β receptor transmembrane receptor	thyroid cancer (甲状腺癌), colorectal carcinoma (大肠癌), esophageal cancer (食道癌), breast cancer (乳腺癌), pancreatic cancer (胰腺癌), small cell lung cancer (肺癌), Ewing's sarcoma (尤文氏肉瘤), pleuropulmonary blastoma (肺母细胞瘤), colorectal cancers (结直肠癌), non-small-cell lung cancer (非小细胞肺癌), malignant mesothelioma (恶性间皮瘤), gastric cancer (胃癌)
13077	TIE	NM_005424.2	556	gacacagaagctctctctctaa	102587	-	receptor activity, kinase related	receptor protein	-
13078	TIMM44	NM_006351.2	180	ctgcgcgctgcctagataagc	102619	-	signal transduction see also 4444 line	tyrosine kinase	-
13079	TK1	NM_003258.1	528	ccgggaagccgcctctatccagga	102642	-	kinase related	thymidine kinase	-
13080	TK2	NM_004614.2	666	ggctctctgaagctcagacttag	102647	-	kinase related	Smad3/Sp-1 heterodimer	-
13081	TLK1	NM_012290.3	741	ggagactcttagatgattcttctca	102672	-	see also 5257 line	-	-
13082	TNK1	NM_003985.1	614	gcgaagctctgattgcctcagctga	102728	-	kinase related	-	-
13083	TM1L2	NM_144678.2	355	ttcttgcccaacccagatcttccatc	102735	-	see also 9730 line	-	-
13084	TOPK	NM_015492.2	1032	tggccacactcttaataatctgaag	102769	-	kinase related	-	-
13085	TOR1B	NM_014506.1	803	ctctgcgctctctcaatctaaataa	102787	-	-	heat shock protein	-
13086	TPX2	NM_012112.4	2211	gagagcgaacccgattgactgataa	102828	-	-	GTP binding	-
13087	TRAI	NM_003289.1	827	tggagcagggaggaagcaactaac	102862	-	see also 2230 line	-	-
13088	TRAID	NM_007064.1	1729	ctctgaatgcgcatttagatctata	102886	-	see also 4944 line	tumor necrosis factor receptor ligand	-
13089	TRAP1	NM_016292.1	816	gagatctgtgtaaggaagctacgc	102956	-	-	-	-
13090	TRAP100	NM_014815.1	602	ctctctcattctgcacaaactaga	102983	-	see also 6010 line	-	-
13091	TRAP150	NM_008119.1	513	atggaaactaccgctcaaaattgac	103012	-	see also 3590 line	-	-
13092	TRG2	NM_021643.1	1385	ttgtgcagctctgtcttctgatt	103064	-	see also 8162 line	protein phosphatase, serine/threonine kinase	-
13093	TRIO	NM_007118.1	8370	ttgcgccttagacttgactctcc	103215	-	receptor activity, transcription regulator or cofactor	transcription cofactor	-
13094	TRIP13	NM_004237.2	974	aagcacttcacaaagtcttgatctc	103240	-	-	-	-
13095	TRPCAP	NM_015636.1	1709	ttgacacgcgctctgtatgacgaact	103289	-	see also 6526 line	-	-
13096	TRPM6	NM_017662.3	2312	atgcagcctctgtgcctctgataact	103345	-	see also 7087 line	-	-
13097	TRPM7	NM_017672.2	2203	ctcttaagctctctctgctcaatg	103531	-	see also 7091 line	-	-
13098	TBK2	NM_173500.2	2936	cttgcgaagctaacgtctcaatcca	103698	-	see also 10073 line	-	-
13099	TG12	NM_017668.2	1757	ctgctacactctgttgcctataag	103775	-	-	-	-
13100	TTK	NM_003318.3	1768	ttgctctgtaccgaagcagaatata	103836	-	kinase related, cell cycle	protein tyrosine kinase	-
13101	TTN	NM_003319.2	9522	atctctccaccccaagatcttataa	104080	-	see also 2250 line	-	-

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13102	TYK	NM_003328.1	1251	aggagatttgccgagcaaggaatg	107043	-	kinase related	non-membrane spanning protein	-
13103	TYL-2	NM_178130.2	532	ctctacctgcccacataaacc	107055	-	kinase related	tyrosine kinase	-
13104	TXND3	NM_016816.2	1377	tgtcctactctccacaactct	107107	-	kinase related	-	-
13105	TYK2	NM_003331.3	1835	gaacttgagctccgaaggtcc	107134	-	see also 2256 line	-	-
13106	TYRO3	NM_006293.2	2788	ctctactctgatacactacc	107178	-	receptor activity, kinase related, signal transduction	transmembrane receptor protein	rheumatoid arthritis (関節リウマチ)
13107	UCK1	NM_01432.1	422	gtgaagtgccgacctatgatt	107181	-	kinase related, protein tyrosine	tyrosine kinase	-
13108	ULK1	NM_003565.1	811	ctctcctctcccatctgactag	107187	-	kinase related, signal transduction	uridine kinase	-
13109	ULK2	NM_014683.2	982	tgtctgtctactcatgtatgac	107208	-	see also 5884 line	kinase	-
13110	UMP-	NM_016308.1	111	ctctctccactgctctcaagc	107256	-	kinase related	uridine kinase	-
13111	UMPK	NM_012474.3	665	cgctctccacagagatttaag	107276	-	kinase related	uridine kinase	meningitis (髄膜炎)
13112	URKL1	NM_017859.1	523	tctactgaactcattcttcc	107282	-	kinase related	uridine kinase	-
13113	VAR52	NM_006295.1	3305	cttctctgaacctctactgaatg	107312	-	see also 4390 line	-	-
13114	VCP	NM_007126.2	537	aaataagcgaacgctatccgt	107325	-	-	adenosinetriphosphatase	-
13115	VPS11	NM_021726.3	687	gaagcgtctccactctatgact	107363	-	-	-	-
13116	VPS4A	NM_013245.2	1387	ctgagcgtctccgaagtggaag	107415	-	see also 5363 line	transcription, regulation of	-
13117	VPS4B	NM_004682.2	944	ctgaagcgcgaagtgatgaag	107431	-	see also 2260 line	peroxisome assembly	-
13118	VRK1	NM_003384.1	375	tcttaacctctgaactgaagctcc	107465	-	see also 4391 line	-	-
13119	VRK2	NM_006295.2	867	ctgagcagaggaagctgaagctcc	107508	-	kinase related	-	-
13120	VRK3	NM_018440.2	381	ccgtctactctcccgattatcc	107531	-	-	kinase related	-
13121	WARS	NM_004184.2	475	agctctagctactgaagctcaa	107543	-	-	tryptophan-tRNA ligase	-
13122	WARS2	NM_015836.1	397	atagctgagctactctgctatgaca	107581	-	-	tryptophan-tRNA ligase	-
13123	WEE1	NM_003390.2	2012	atgaagctccctgctatcaacaga	107613	-	see also 2287 line	-	-
13124	XAB1	NM_007266.1	822	aaaggaagatgctctcgatgatg	107671	-	signal transduction	protein tyrosine kinase	-
13125	YES1	NM_005433.2	839	tgtcgtctgagctgtaaacatg	107693	-	kinase related	kinase	-
13126	YME1L1	NM_014263.2	955	ctctcgtctctgagcaacacaa	107750	-	see also 5570 line	-	-
13127	ZAK	NM_016653.1	633	tgtctgctctgtctctctaac	107777	-	see also 6867 line	-	-
13128	ZAP70	NM_001070.2	721	atgacgcgcgcgcgaacattca	107845	-	kinase related	-	-
13129	ZCWC3	NM_015359.1	2733	comtctctctgatttaagctaa	107941	-	-	ATP binding	selective T-cell defect (選択的 T 細胞欠損症)
13130	CNGA3	NM_001298.1	252	caagctgcgcgcgcctactctct	107944	-	see also 858 line	-	-
13131	EPAC	NM_006108.2	1001	agagcctctggtgtaactatct	107963	-	kinase related, signal transduction	-	-
13132	HCN3	NM_020897.1	383	ttagactctctcaagctatgct	107978	-	see also 8020 line	-	-
13133	HCN4	NM_005477.1	2920	ctgcccgcgcgcctactcttgg	108004	-	channel	-	-

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13134	PRKARIA	NM_002734.2	454	atgagctcctcctgttgaag	108016	-	see also 1773 line	-	-
13135	PRKAR2A	NM_004157.1	1263	agctgtatttttgctctcag	108064	-	see also 2197 line	-	-
13136	PRKAP2B	NM_002736.1	1346	aggaacatgtctcctctaga	108094	-	-	-	-
13137	ACAS2	NM_018677.2	2004	agcagcgtctctgagagctc	108124	-	-	-	-
13138	ADSS	NM_001128.2	881	aaattctgacacacacacaa	108174	-	kinase related	-	-
13139	ADSSL1	NM_152323.3	1094	agctctgacgtgattcttaa	108175	-	see also 714 line	-	-
13140	APWCF1	NM_021203.2	263	aggtttctaacgctctatag	108192	-	-	-	-
13141	ARF1	NM_001658.2	233	tgaacacgttgagctacagac	108208	-	see also 8138 line	-	-
13142	ARF4	NM_001660.2	639	aggtctcctgctctctgtaca	108219	-	signal transduction	small monomeric	-
13143	ARF4L	NM_001661.1	433	cgagacagcgtctctgtttgt	108222	-	signal transduction	protein transporter	-
13144	ARF6	NM_001663.2	1018	atggttaacctctactacaant	108240	-	see also 10396 line	ARF small	-
13145	ARFD1	NM_001656.2	1237	tgggtgttctgttgaagtgag	108279	-	see also 10395 line	monomeric	-
13146	ARFIP2	NM_012402.2	933	caagccatctggagcaagtatga	108314	-	see also 5310 line	-	-
13147	ARFRP1	NM_003224.2	430	cggtctctctcgtctctgact	108326	-	see also 2183 line	-	-
13148	ARHA	NM_001664.1	375	caagatacgtgtatactgag	108329	-	-	Rho small monomeric	breast cancer(乳癌), Alzheimer disease(アルツハイマー病)
13149	ARHB	NM_004040.1	224	cggaacagcgtctctctctcag	108336	-	signal transduction	Rho small monomeric	-
13150	ARHD	NM_014578.2	384	tgtatccacaagaagtcaattt	108341	-	signal transduction	Rho small monomeric	-
13151	ARHE	NM_005168.2	647	tggagcagctctctatctgaat	108359	-	see also 3637 line	-	-
13152	ARHF	NM_019034.2	566	ctgaagtcttcgcgaattcttg	108388	-	signal transduction	Rho small monomeric	-
13153	ARHG	NM_001665.1	384	caagtcgcgtctctctatgaagc	108371	-	cell cycle,	Rho small monomeric	-
13154	ARHGAP1	NM_004308.2	976	cttgatttgccagcagcaatga	108386	-	signal transduction	SH3/SH2 adaptor	-
13155	ARHGEF5	NM_005435.2	1546	cttgcagcaggttgattcttctc	108397	-	signal transduction	protein	-
13156	ARHH	NM_004310.1	830	ctgtgcgaacacatacctcttc	108399	-	kinase related,	guanyl-nucleotide release factor	-
13157	ARHI	NM_004675.1	325	cggcaactctcgtctatgctacc	108401	-	transcription regulator,	Rho small monomeric	-
13158	ARHJ	NM_020663.2	876	tggcccttctctctatgaaa	108412	-	or,	GTPase	-
13159	ARHN	NM_005440.2	630	gggaatgagcgcagatgacaca	108421	-	signal transduction	small monomeric	small cell lung cancer(肺癌)
13160	ARHT1	NM_016307.2	871	atctcttcgagattctgtatga	108441	-	kinase related	GTPase	-
13161	ARHT2	NM_138769.1	1824	ggagctgctcgtctgtgctt	108485	-	signal transduction	Rho small monomeric	-

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13162	ARHU	NM_021205.3	1278	tcctctctgcttcactcaactccg	108493	-	signal transduction	-
13163	ARHV	NM_133639.2	545	aggagagcagcagcagcagcagc	108494	-	signal transduction	-
13164	ARL1	NM_001177.3	271	aggcttctctctactactaac	108501	-	signal transduction	small monomeric GTPase
13165	ARL3	NM_00431.2	581	aggacagcactcagctacaccc	108521	-	signal transduction	small monomeric GTPase
13166	ARL6	NM_01209.2	822	agtcagcagctcagctcagctc	108542	-	see also 5127 line	-
13167	ARL6	NM_022146.3	713	ccttcagcttcacactctctct	108556	-	see also 9083 line	-
13168	ARL6P2	NM_022374.1	485	gttcattgacacactcattgac	108574	-	see also 8355 line	-
13169	ARL8	NM_178615.2	520	aggagacagctcagctactcaaa	108628	-	signal transduction	-
13170	G14rH59	NM_024955.3	1672	aaagacagctccagctactaac	108645	-	-	-
13171	DDC42	NM_001791.2	416	ctctccaagacctcctctctc	108668	-	signal transduction	-
13172	DRA52	NM_017594.2	97	ctgtcttgatgtttgtaagc	108672	-	-	-
DKFZP564								
13173	J0883	NM_015459.2	573	atctcagactactatctctca	108678	-	-	-
13174	DNCL11	NM_016141.1	1402	aaagctcttcagcaattcttc	108742	-	see also 6690 line	-
13175	DNM1	NM_00408.1	1638	ctctctcactcactaaatattg	108759	-	inhibitor	-
13176	DNM1L	NM_005890.2	1895	agatttatgaagcactcaataa	108828	-	see also 3950 line	-
13177	DNM2	NM_004945.1	1515	agcaattcttcacactctcaat	108861	-	see also 3443 line	-
13178	DR32	NM_001388.3	273	tgagcaatccacactctcaat	108867	-	signal transduction	GTP binding
13179	FLJ10101	NM_024718.2	928	tcagcaatccacactctcaat	108868	-	signal transduction	-
13180	FLJ10702	NM_018184.1	359	aaagctcactcagcaataaac	108869	-	signal transduction	-
13181	FLJ10849	NM_018243.2	1048	tgtagcagagctctgactctga	108879	-	cell cycle	-
13182	FLJ21665	NM_024603.1	836	ctgagctctcttcagagatca	108946	-	-	-
13183	FLJ22595	NM_025047.1	738	aaagcactcttgagctctctcaag	108905	-	signal transduction	-
13184	FLJ22655	NM_024730.2	737	aaagcactcttgagctctctcaag	108974	-	signal transduction	-
13185	FLJ25410	NM_144605.1	480	aaagcactcttgagctctctcaag	108978	-	cell cycle	-
13186	FLJ39249	NM_173664.2	657	tggtctcagagctctcagatcac	108990	-	-	-
13187	GBP1	NM_020053.1	661	caagatgctacactcagactctcc	108992	-	RNA polymerase II transcription factor	-
13188	GBP2	NM_014203.3	870	tgagctcttcctcagactcaga	108996	-	GTPase	-
13189	GBP3	NM_018284.1	1862	gaagatctctctcagactcaga	109021	-	-	-
13190	GBP4	NM_052941.2	1878	tgagcttgctcagactcagactg	109034	-	-	-
13191	GBP5	NM_052942.2	2244	caagagactctctcagactcaga	109051	-	-	-
13192	GEM	NM_005261.2	696	cagagagactcactcagactctct	109055	-	signal transduction	transcription factor
13193	GNA12	NM_007353.1	501	cagcagcagagcagcagcttcagc	109062	-	signal transduction	signal transducer
13194	GNA13	NM_005672.3	543	cagcagcagagcagcagcttcagc	109068	-	see also 4606 line	-
13195	GNA14	NM_004297.2	783	tgagcagcagagcagcagcttcagc	109100	-	see also 2880 line	-
13196	GNA15	NM_002068.1	1146	gaagctctcactcagactcagac	109120	-	see also 1335 line	-
13197	GNA11	NM_002068.4	985	aggagctcagcagcagcagcttcct	109141	-	apoptosis	signal transducer

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13198	GNA12	NM_002070.1	546	tgagcgcctcaaggagatacaagc	109150	-	gpcr, signal transduction	adrenal cortical tumor (副腎皮質腫瘍), pituitary adenoma (下垂体腫瘍), ventricular tachycardia (心室頻拍症)
13199	GNA13	NM_006496.1	305	tggagcgcctcaagagattactctt	109163	-	gpcr, signal transduction	-
13200	GNA14	NM_002071.1	765	cgagcttcagcttggttactctca	109193	-	see also 1336 line, gpcr	-
13201	GNAO1	NM_020988.1	394	tggagcgcctcaaggagatacaaga	109213	-	signal transduction, gpcr	-
13202	GNAS	NM_000518.3	985	cagaatttcctctctcactactct	109228	-	gpcr, signal transduction	Albright hereditary osteodystrophy (アルブライト遺伝性骨ジストロフィ), McCune-Albright syndrome (マクキューン-オルブライト症候群), parosteal fibrous dysplasia (線維性骨異形成), pseudohypoparathyroidism (偽性副甲状腺機能低下症), erythroid leukemia (赤白血病)
13203	GNAT1	NM_000172.2	919	acgtctctcttcagagagctcaag	109244	-	gpcr, signal transduction	night blindness (夜盲症)
13204	GNAT2	NM_005272.2	920	aagatgacagagctgaactgctg	109255	-	receptor activity, signal transduction	achondroplasia (軟骨形成不全症)
13205	GNAT3	NM_002073.1	1027	ccggtgacagagctcaactatg	109266	-	see also 1338 line	-
13206	GNL1	NM_005275.2	1250	agcctacgcacaaatcgatacc	109271	-	signal transduction	GTP binding
13207	GTPBP4	NM_012341.1	1584	gagagagagagctgctgactctg	109334	-	see also 5289 line	-
13208	GTPBP5	NM_015666.2	1175	ctgactcgaagctgacgatttaa	109349	-	-	-
13209	KBRAS2	NM_017595.4	304	ctgagacagctgctcttcctg	109410	-	kinase related	-
13210	KIAA0820	NM_015569.1	1572	agagcagagctgctcttctg	109449	-	signal transduction	-
13211	LOC51277	NM_016564.1	87	cgagcttccttcgactcaagctca	109491	-	see also 6486 line	-
13212	LOC51762	NM_016530.1	498	cgagcttccttcgactcaagctca	109519	-	see also 6910 line	-
13213	MEI1	NM_005370.4	520	cgagacagctgctgactgactg	109530	-	signal transduction	protein transporter
13214	MGC10731	NM_030907.2	518	cgagacagctgctgactgactg	109548	-	signal transduction	protein transporter
13215	MGC2827	NM_023940.2	333	cgagcttccttcacaaacagctca	109558	-	signal transduction	-
13216	MGC4063	NM_032525.1	202	gagctcctgctcgaagaaatg	109566	-	-	-
13217	MGC9726	NM_177403.3	764	atggtgctcgaagcttctgactg	109578	-	-	-
13218	MRAS	NM_012219.2	159	agagctccttcactgaaacactg	109592	-	signal transduction	RAS small monomeric
13219	MSF	NM_006940.2	1230	agcttccttcgagcagctatg	109592	-	cell cycle	-
13220	MX1	NM_002462.2	854	atgctccgctgactgacttaata	109608	-	signal transduction	antiviral response
13221	MX2	NM_002463.1	1752	cgagacagcagcttgaagcaataa	109647	-	-	antiviral response
13222	NEDD5	NM_004404.1	732	tggacttaagccttgatgactg	109668	-	cell cycle	antiviral response
13223	NRAS	NM_002524.2	445	cgagcttccttcgagacccaataa	109675	-	cell cycle, signal transduction	congenital neutropenia (先天性好中球減少症), breast cancer (乳癌), neuroblastoma (神経芽細胞腫), melanoma (メラノーマ)

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13224	OPAI	NM_015560.1	428	atgatacgcgccttattgtaata	106955	-	see also 6473 line	phosphoenolpyruvate carboxylase deficiency (ホスホエノールビルビン酸カルボキシキナーゼ欠乏症)
13225	POK1	NM_002591.2	188	ctgaacactctgcgcgaattgtct	109780	-	kinase related	phosphoenolpyruvate carboxylase deficiency (ホスホエノールビルビン酸カルボキシキナーゼ欠乏症)
13226	POK2	NM_004563.1	1437	aggatgtaccctctgttcacagagg	109829	-	kinase related	-
13227	POPL	NM_011222.1	718	gattctgactgtctgactactcctatg	109838	-	-	-
13228	PNUT1	NM_002686.2	1100	ctgcgcgactgcgcgaactctctctc	109842	-	cell cycle	-
13229	PNUT2	NM_013574.2	1008	tggatcatcagatctctctctc	109853	-	see also 3111 line	-
13230	PI0004	NM_013344.2	600	ctgtctgctctctctctctctctctg	109881	-	-	-
13231	RAB17A	NM_004663.3	339	gcgcgtctctgcactctctctctctc	109888	-	see also 3184 line	-
13232	RAB17B	NM_004218.1	485	actctatggagagcaattccaagaac	109904	-	signal transduction	-
13233	RAB17C	NM_016332.2	407	ctgtctcaacggactctctctctctc	109914	-	see also 6810 line	-
13234	RAB17	NM_022449.1	1148	caagctctgcgcgtctctctctctctc	109931	-	signal transduction	-
13235	RAB18	NM_021252.3	286	gaagctgcacagctctctctctctct	109937	-	see also 8145 line	-
13236	RAB1A	NM_004161.2	188	atgaatccggaatctgtattattt	109950	-	see also 2788 line	-
13237	RAB2	NM_002865.1	332	gaattctgctctgattgattctaac	109977	-	-	protein transporter
13238	RAB20	NM_017817.1	659	gaagctgcgttgccctctctctctaa	109994	-	signal transduction	small monomeric
13239	RAB21	NM_014999.1	372	ctgcgcgaacacagtttaacacpaa	110002	-	signal transduction	GTPase
13240	RAB22A	NM_020673.2	465	atctctctgacacaaatgactact	110023	-	see also 7814 line	protein transporter
13241	RAB23	NM_016273.2	1162	caagaaacacgaattcaactgattg	110057	-	signal transduction	-
13242	RAB24	NM_130781.1	818	gaagctgcacaaatctactctctg	110070	-	signal transduction	protein transporter
13243	RAB27A	NM_004560.3	856	atctctctctgactctgactgattg	110085	-	see also 3119 line	-
13244	RAB27B	NM_004163.3	566	ctgcacaaatattgacaaactctat	110092	-	signal transduction	RAB small monomeric
13245	RAB28	NM_004249.1	637	caagctgataactctctctctctctaa	110106	-	signal transduction	RAB small monomeric
13246	RAB29	NM_032845.2	897	caagctgataactctctctctctctaa	110117	-	see also 5310 line	-
13247	RAB30	NM_011486.3	484	aaagagattctctgctctctctctctc	110124	-	see also 5704 line	-
13248	RAB31	NM_008686.2	188	aagctctgctgctgctctctctctc	110134	-	see also 4807 line	-
13249	RAB32	NM_006834.2	436	aggagcagcttggtgcacactctgccc	110148	-	signal transduction	RAB small monomeric
13250	RAB33A	NM_004794.2	564	aagctctgtctctctctctctctctc	110158	-	signal transduction	RAB small monomeric
13251	RAB33B	NM_031296.1	966	atgcctctgctctctctctctctctctc	110190	-	see also 9007 line	-
13252	RAB34	NM_031934.3	1205	tgtctggaattctctctctctctctctc	110206	-	see also 9056 line	-
13253	RAB35	NM_006861.4	445	gcgctctgtctctctctctctctctctc	110214	-	see also 4806 line	-
13254	RAB36	NM_004914.2	388	ggagaaactgtgcgcctctctctctctc	110223	-	signal transduction	-
13255	RAB37	NM_175738.2	711	ccagaaactgtctctctctctctctctc	110226	-	signal transduction	protein transporter
13256	RAB38	NM_022337.1	128	gcgctctgtctctctctctctctctctc	110236	-	signal transduction	protein transporter
13257	RAB39	NM_017516.1	232	caagaaactgtctctctctctctctctc	110252	-	see also 5331 line	-
13258	RAB3C	NM_138453.2	462	aagctgtgtctctctctctctctctctc	110290	-	signal transduction	-

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13292	SARA1	NM_020150.3	396	cagcaataaaggatgctttt	110831	-	signal transduction	small monomeric GTPase	-
13293	SARA2	NM_016103.2	499	ttrcaatgctctactactgatt	110845	-	-	small monomeric GTPase	-
13294	1.Sep	NM_025235.2	655	ccggcgcacacagaaagctca	110860	-	cell cycle	GTP binding	-
13295	10.Sep	NM_144710.2	1710	aggcacaagaccctaaagactcc	110879	-	cell cycle	-	-
13296	3.Sep	NM_019106.4	628	ggccctctgactgaactctcc	110885	-	cell cycle	-	-
13297	6.Sep	NM_015725.4	266	atgcagcagccatagatctcg	110891	-	cell cycle	protein binding	-
13298	SGNE1	NM_003020.1	589	aggcacaagaccctaaagcttg	110891	-	signal transduction	enzyme activator	-
13299	SRPR	NM_003133.2	312	tccgctgttttcggacaagctacc	110912	-	see also 2120 line	-	-
13300	SUCLG1	NM_003849.1	327	ggcacaagcctctctctatt	110940	-	-	succinate-CoA ligase (GDP-forming)	-
13301	TUBA1	NM_006000.1	366	atgcctctgtacataaccatt	110950	-	-	structural molecule	-
13302	TUBA4	NM_025019.1	443	tgagctgctctctcttactat	110954	-	-	structural molecule	-
13303	TUBA8	NM_018943.1	1379	ggacactctctctctaaaga	110963	-	-	structural molecule	-
13304	TUBB1	NM_030733.1	222	cagcattcagatcagaacttag	110969	-	-	structural molecule	-
13305	TUBB4Q	NM_020040.2	731	gggtacctctctctctaaaga	110983	-	-	structural molecule	-
13306	TUBD1	NM_016261.1	811	atgcagctgctctacactcc	111012	-	-	structural constituent of cytoskeleton	-
13307	TUBE1	NM_016282.3	570	atgctaaacctccctctaat	111043	-	-	structural constituent of cytoskeleton	-
13308	TUBG1	NM_001070.3	603	gtgtgtgtcagctcttacttc	111063	-	-	structural constituent of cytoskeleton	-
13309	TUBG2	NM_016437.1	739	aagctgtgtcagctcttactat	111065	-	-	structural constituent of cytoskeleton	-
13310	VTS59635	NM_033315.2	346	tgtgtgcacattctgtacacac	111068	-	signal transduction	structural molecule	-
13311	ZNF179	NM_007148.2	1483	ggagaggttcagagctatctga	111073	-	-	zinc binding	-
13312	CNGA1	NM_000087.1	1018	tggtgtaccctcgatcttaactga	111106	-	see also 66 line	-	-
13313	PDE10A	NM_006661.1	1525	gtgatttaccctggagctcagtag	111180	-	see also 4709 line	-	-
13314	PDE5A	NM_001083.2	812	ctgtatcctcttgatagaaaca	111229	-	see also 677 line	-	-
13315	C5orf3	NM_018691.1	1198	ccgaattctctacatctctcagg	111289	-	see also 7564 line	-	-
13316	LOC56851	NM_020154.1	228	aagacagctgtgcttctcttaag	111307	-	see also 7772 line	-	-
13317	BIRC1	NM_004536.1	511	ggagcttaacagctcagatgctac	111332	-	-	apoptosis	-
13318	DHRG3	NM_004753.3	962	ggagatcctcaaatctctcagg	111357	-	-	nucleotide binding	-
13319	NOX4	NM_016931.2	1481	ggctcctcttggagatctcctga	111391	-	-	-	-
13320	SLC22A4	NM_003059.2	1159	ctgtctcagctcagatctctcc	111395	-	-	-	-
13321	ABT1	NM_013275.2	242	ggctcagctcagatctctctctta	111412	-	see also 5413 line	-	-
13322	ALP	NM_003977.1	187	ggctctcagctctctcaagctgg	111422	-	transcription co-activator or	-	-

amniotrophic lateral sclerosis (遺伝性筋萎縮性側索硬化症), spinal muscular atrophy (脊髄性筋萎縮症)

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13323	BRDT	NM_001726.1	1697	tggcgaattagtactcaataaac	111473	-	transcription regulat or, kinase related	-
13324	CRSP2	NM_004229.2	395	acgcccaactcttcgtcattat	111517	-	receptor activity, transcription_regulat	-
13325	CRSP7	NM_004631.2	1197	tccagactatccgttaacttgc	111678	-	receptor activity, transcription_regulat	-
13326	CRSP8	NM_004269.2	667	gggataatacggaaatgtctaca	111699	-	transcription_regulat	-
13327	CRSP9	NM_004270.3	525	aagcaacttgaaacgagttaaga	111719	-	receptor activity, transcription_regulat	-
13328	DTX1	NM_004416.1	850	ggcgaatgaaggcctacgaataag	111729	-	transcription_regulat	-
13329	GCN5L2	NM_021078.1	878	tggctactcaaaaggtcaattac	111738	-	transcription co- activator	-
13330	GTF2A1	NM_015859.1	907	caagcaaatgtgccaaatatac	111766	-	transcription_regulat transcription initiation factor	-
13331	HCF-2	NM_013320.1	895	gaattgaccacccctagtattcaga	111804	-	transcription_regulat	-
13332	HSGT1	NM_007265.1	1924	caagataccgatacaattcaga	111895	-	see also 5063 line	-
13333	NCOA1	NM_003743.3	3086	agagaggttgatgaattatatta	112014	-	see also 2559 line	-
13334	NCOA2	NM_005340.1	4441	atggctccgcagcagatttaaga	112129	-	see also 4581 line	-
13335	NCOA3	NM_006534.2	950	gtgcaccccccacttctcaagg	112153	-	see also 4587 line	-
13336	NCOA4	NM_005437.1	420	tggatttgagccagcttaatttg	112247	-	see also 3791 line	-
13337	NR1P1	NM_003489.1	3731	aagcctctctaagataaagaag	112347	-	transcription_regulat	-
13338	PCBD	NM_000281.1	313	aattgacggtctcatgacatag	112356	-	or	-
13339	PMF1	NM_007221.1	146	ccggcagctctccagatctact	112357	-	see also 245 line	-
13340	RNF14	NM_004290.3	1352	taagagatgaacaaagagaga	112390	-	see also 2874 line	-
13341	SMARCD2	NM_003077.2	1322	ccgttactccgcagatctcca	112403	-	see also 2072 line	-
13342	SMARCD3	NM_003078.2	1183	aagcggcgtctatcacatga	112413	-	see also 2074 line	-
13343	SNW1	NM_012245.2	171	aggtcctactctcgtttattag	112420	-	transcription_regulat transcription co- activator	-
13344	TAFF7	NM_005642.2	1133	ctgaaacacgaactactctgc	112459	-	or	-
13345	TAZ	NM_015472.3	1096	atgagatctcatcatctaatag	112479	-	transcription_regulat	-
13346	TCERG1	NM_006706.2	43	ttccgcagaggtgaacgttcaacc	112487	-	or	-
13347	TGFB111	NM_015927.3	874	gagcgtctcttccaaagtgtgc	112569	-	transcription_regulat	-
13348	TNRC11	NM_005120.1	5718	ccgtctctgtgcgttcaacagc	112654	-	or	-
						-	see also 3592 line	-

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13349	TRAP95	NM_005481.2	450	atgcgcagcggcagctcaagtcg	112874	-	receptor activity, transcription, regulat or,	-	-
13350	TRIM32	NM_012210.2	1298	ctgaacgtgagctactgtctata	112709	-	transcription, regulat or,	zinc binding	-
13351	TRIP11	NM_004238.1	4795	aasctcttaagcagctcaactg	112816	-	transcription, regulat or,	transcription co-activator	-
13352	TRIP4	NM_016213.2	1130	cagccactgacaaattggttag	112877	-	see also 6724 line	-	-
13353	UTF1	NM_003577.1	363	cgccttcacagttctctaaagaca	112894	-	transcription, regulat or,	-	-
13354	VGLL1	NM_016267.2	911	ctggggcaccacatcgtatacc	112913	-	transcription, regulat or,	-	-
13355	CALR	NM_004343.2	773	ctggagacagccgcagcatctcc	112923	-	transcription, regulat or,	transcription co-repressor	-
13356	OREG	NM_003851.1	330	catctctctctctattcttctac	112930	-	transcription, regulat or,	-	-
13357	HD	NM_002111.4	5141	gcctctcgtaacacattcaact	113042	-	transcription, regulat or, apoptosis	transcription co-repressor	Huntington disease (ハンチントン病), Huntington's chorea (ハンチントン舞踏症)
13358	L3MBTL2	NM_031486.3	355	cagagctctctctctctctctcc	113130	-	see also 3039 line	transcription co-repressor	-
13359	N4B2	NM_005967.1	1151	aggagacacacgcctctattacg	113153	-	transcription, regulat or,	-	-
13360	PAWR	NM_002583.1	984	atggtgtctctagatatacaggg	113162	-	transcription, regulat or, apoptosis	-	-
13361	PBXP1	NM_020324.2	1233	cagctattatgcaagctgtttaga	113169	-	see also 7886 line	-	Perkinson disease (パーキンソン病)
13362	PLUG1	NM_002665.1	535	aagttatcgcgcattatcattag	113210	-	see also 1745 line	-	-
13363	RNF12	NM_016120.2	491	atgtgtactatatactagactag	113237	-	see also 6674 line	-	-
13364	RYBP	NM_012234.3	676	tggcgaactgcacgccttattctc	113295	-	transcription, regulat or	-	-
13365	SAP18	NM_005870.3	355	aagactctctctctctctcttagg	113302	-	see also 4085 line	-	-
13366	SAP30	NM_003864.1	552	gagcgcagagctctcttaccatct	113306	-	transcription, regulat or	-	-
13367	SIAT42	NM_005067.4	898	atcccacacagcatcaccaccc	113319	-	see also 3535 line	-	-
13368	SUFU	NM_016169.2	1314	ctgcctatgagcgcacttaccata	113338	-	transcription, regulat or,	-	-
13369	TRAP4	NM_016614.2	726	ctctgagcagcaatgatacattta	113365	-	see also 6951 line	-	-
13370	TZFP	NM_014393.1	283	cgccgcagcactctgtgactactct	113381	-	transcription, regulat or	-	-
13371	YAF2	NM_005748.2	418	aasctctccgcctctactatcagc	113391	-	transcription, regulat or	transcription co-repressor	-
13372	ZFPM2	NM_012092.2	2112	cagtcgcgcagcaatcattctag	113432	-	see also 5112 line	-	-
13373	NMI	NM_004686.1	554	ctcgcctctgaaagttctctatga	113479	-	transcription, regulat or	transcription cofactor	-

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13374	PCAF	NM_003984.3	1785	ggagatattccagtgaaattaat	113527	-	transcription_regulat or, cell cycle	-	-
13375	PIR	NM_003986.1	232	tggagctctccaaagaagtact	113563	-	transcription_regulat or	transcription cofactor	-
13376	HDAC11	NM_024827.1	244	gtcaacaaggagcgtactcttaa	113581	-	transcription_regulat or	-	-
13377	HDAC3	NM_003983.2	359	gagctctcgtcgtgcacacagg	113605	-	see also 2640 line	-	-
13378	HDAC4	NM_006037.2	1448	tcggagatctgacactctctataac	113639	-	transcription_regulat or, cell cycle	transcriptional repressor	-
13379	HDAC5	NM_005474.3	1219	tggagctcgtcgtcgtctctataca	113651	-	see also 3811 line	-	-
13380	HDAC7A	NM_015401.1	2038	tggcaacatgcagctgtttgtgttg	113669	-	transcription_regulat or, cell cycle	-	-
13381	HDAC8	NM_018486.1	82	ctggtcccgattatctatctatag	113684	-	or	-	-
13382	HDAC9	NM_014707.1	266	ctgttctccgttcagaacaatttg	113719	-	see also 5898 line	-	-
13383	MYBBP1A	NM_014520.1	93	ccpaccgcctatgacctattzaag	113783	-	transcription_regulat or	-	-
13384	NFKBIA	NM_020529.1	1026	gagcccaacgtctgacactataga	113819	-	transcription_regulat or, apoptosis	Transcription factor p65	-
13385	RNF19	NM_015435.3	1621	tatgtatcgtgtctccatctatg	113855	-	see also 8415 line	-	-
13386	VHL	NM_000551.2	756	caagctcgtctctagaagaactctgg	113899	-	transcription_regulat or, apoptosis, cell cycle	transcription factor binding	benign familial polyorthemia(良性家族性赤血球 増加症), von Hippel-Lindau disease(ヒッペル・リ ントウ病(網膜小脳血管腫症)), renal cell carcinoma(腎細胞癌), von Hippel-Lindau syndrome(フォン・ヒッペル・リンダウ症候群), CNS Tumours(中枢神経腫瘍), pheochromocytoma(褐色細胞腫), pheochromocytoma(褐色細胞腫), squamous cell cancer(扁平上皮癌), familial nervous system
13387	GSN	NM_000177.3	740	caatcatcgtatgataagaactcgg	113910	-	see also 151 line	-	-
13388	CAPG	NM_001747.1	864	tgcctctgaactctctatctct	113928	-	-	berbed-end actin capping	-
13389	CAPPA3	NM_03328.2	196	gkttatcttcagacactgttata	113934	-	see also 9406 line	-	-
13390	CAPZA1	NM_006135.1	101	atgactctggctactactaat	113977	-	-	structural constituent of cytoskeleton	-
13391	CAPZA2	NM_006136.1	766	atctgcgaactactcttcaaacg	114012	-	-	structural constituent of cytoskeleton	-
13392	CAPZB	NM_004930.1	482	ggagtcgcatcgccactctaaag	114028	-	see also 3429 line	-	-
13393	EVL	NM_016337.1	323	caagctcagcctctaaactcttcg	114039	-	signal transduction	-	-
13394	HEIHFB21	NM_007032.3	508	aagacgtcagctctcaactctcagc	114050	-	see also 4921 line	-	-
13395	ARP3BET	NM_020445.1	261	gttgccgcatcagcatggaatca	114060	-	-	-	-

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Accession	Gene	Protein	Signal transduction	actin cross-linking
13396	ELNA	NM_001456.1	3814	114088
13397	FSN3	NM_020369.1	1456	114129
13398	MACF1	NM_012090.3	9982	114353
13399	PLST1	NM_002670.1	1874	114666
13400	SPTA1	NM_003126.1	3411	114739
13401	AVIL	NM_006576.2	710	114835
13402	OFL1	NM_005507.1	288	114862
13403	ACTN4	NM_004924.3	886	114874
13404	EPBA9	NM_001978.1	756	114884
13405	FSN1	NM_003008.1	1153	114898
13406	FSN2	NM_017418.1	1122	114907
13407	VIL1	NM_007127.1	864	114916
13408	DSTN	NM_006870.2	523	114939
13409	WASF1	NM_003931.1	457	114948
13410	WASF3	NM_006646.3	906	114992
13411	ABLIM1	NM_002313.4	1194	115041
13412	ABLIM2	NM_032432.2	959	115085
13413	ACTN1	NM_001102.2	2638	115107
13414	ACTN2	NM_001103.1	2023	115135
13415	ACTN3	NM_001104.1	2151	115151
13416	ADD1	NM_001119.3	255	115154
13417	ADD2	NM_001617.1	508	115196
13418	ARPC1A	NM_006409.2	762	115310
13419	BCL7B	NM_001707.2	232	115323
13420	BPAQ1	NM_001723.3	1239	115366
13421	C6orf209	NM_016368.2	1542	118063
13422	C6orf40	NM_017998.1	768	118088
13423	CALD1	NM_004342.4	987	118074
13424	CEACAM1	NM_007122.2	1306	116110

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13425	GEACAM5	NM_004363.1	2093	tgcctatgcgcgaacataatcc	116131	-	-	USF43/USF44 complex	-
13426	GFL2	NM_021194.5	321	atgtatgaacattgctgaactct	116140	-	see also 8198 line	-	-
13427	CGN	NM_020170.1	3702	acatcatcctctccatctctat	116178	-	-	-	-
13428	CLNN	NM_024734.2	1068	agagatcctctccatctctctaac	116202	-	-	-	-
13429	ONNI	NM_001290.3	293	cctctctcctcgcctcctctctaac	116243	-	-	calmodulin binding	-
13430	CNN2	NM_004368.1	20	gcctctcctcgcctcctcctctaac	116251	-	-	calmodulin binding	-
13431	CNN3	NM_001838.1	1049	gcctctcctcgcctcctcctctaac	116279	-	-	tropomyosin G binding	-
13432	CORO1A	NM_001074.1	367	gcctctcctcgcctcctcctctaac	116285	-	-	structural molecule	-
13433	CORO1B	NM_020441.1	517	gcctctcctcgcctcctcctctaac	116287	-	see also 5620 line	-	-
13434	CORO1C	NM_014325.2	294	gcctctcctcgcctcctcctctaac	116287	-	-	-	-
13435	CORO2A	NM_003388.2	555	gcctctcctcgcctcctcctctaac	116328	-	-	membrane associated actin binding	-
13436	CORO2B	NM_006091.1	1266	gcctctcctcgcctcctcctctaac	116351	-	-	-	-
13437	COTL1	NM_021146.2	450	gcctctcctcgcctcctcctctaac	116357	-	-	-	-
13438	DAAM1	NM_014992.1	2415	gcctctcctcgcctcctcctctaac	116416	-	-	-	-
13439	DAAM2	NM_015345.2	522	gcctctcctcgcctcctcctctaac	116443	-	-	-	-
13440	DBN1	NM_004395.2	1926	gcctctcctcgcctcctcctctaac	116491	-	-	-	-
13441	DIAPH1	NM_005219.2	885	gcctctcctcgcctcctcctctaac	116504	-	-	-	-
13442	DIAPH2	NM_006729.2	2825	gcctctcctcgcctcctcctctaac	116629	-	see also 4745 line	-	-
13443	DMD	NM_000108.2	9776	gcctctcctcgcctcctcctctaac	116884	-	see also 70 line	-	-
13444	DNASE1	NM_005223.2	1341	gcctctcctcgcctcctcctctaac	116891	-	apoptosis	deoxyribonuclease	systemic lupus erythematosus (全身性エリテマトーデス), arthritis (関節炎)
13445	ENCL1	NM_003633.1	1025	gcctctcctcgcctcctcctctaac	116939	-	see also 2451 line	-	-
13446	EPB41	NM_004437.1	938	gcctctcctcgcctcctcctctaac	116969	-	-	-	-
13447	EPB41.1	NM_012156.2	1265	gcctctcctcgcctcctcctctaac	117022	-	see also 5152 line	-	hereditary elliptocytosis (遺伝性楕円赤血球症)
13448	EPB41.2	NM_01431.1	1503	gcctctcctcgcctcctcctctaac	117062	-	see also 1000 line	-	-
13449	EPB41.3	NM_012307.2	1057	gcctctcctcgcctcctcctctaac	117121	-	see also 5268 line	-	-
13450	PHD1	NM_013241.1	3413	gcctctcctcgcctcctcctctaac	117185	-	-	actin binding	-
13451	PLJ1	NM_002018.2	2388	gcctctcctcgcctcctcctctaac	117202	-	-	actin binding	-
13452	FLNB	NM_001457.1	866	gcctctcctcgcctcctcctctaac	117329	-	signal transduction	-	Alzheimer disease (アルツハイマー病)
13453	FMNL1	NM_005892.3	688	gcctctcctcgcctcctcctctaac	117345	-	-	-	-
13454	FXYD5	NM_014164.3	216	gcctctcctcgcctcctcctctaac	117367	-	channel	ion channel	-
13455	GC	NM_000583.2	1127	gcctctcctcgcctcctcctctaac	117393	-	-	vitamin D binding	diabetes mellitus (糖尿病), diabetes (糖尿病)
13456	GMFB	NM_004124.2	288	gcctctcctcgcctcctcctctaac	117414	-	-	protein kinase inhibitor	-
13457	GMFG	NM_004877.1	286	gcctctcctcgcctcctcctctaac	117426	-	kinase related	protein kinase inhibitor	-
13458	HDAOC6	NM_006944.2	2403	gcctctcctcgcctcctcctctaac	117467	-	transcription regulation	transcriptional repressor	-
13459	HIP1	NM_005338.4	948	gcctctcctcgcctcctcctctaac	117493	-	or, cell cycle	-	-
13460	IPP	NM_005897.1	1764	gcctctcctcgcctcctcctctaac	117512	-	see also 3721 line	-	-

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13461	IQGAP2	NM_006533.1	4237	atgctgaacgctcaatcctaga	117641	-	signal transduction	-
13462	KIAA0943	NM_014945.1	1057	ctgctcaaatgagcaatgaa	117649	-	see also 6134 line	-
13463	KLHL1	NM_020866.1	2614	ctcttcctccgctcctcctgctg	117729	-	see also 8098 line	-
13464	KLHL2	NM_007246.2	1910	ttgctccctccgcatatctatata	117729	-	see also 3045 line	-
13465	KLHL3	NM_017415.1	1841	atgctccctccgcatatctatata	117821	-	structural molecule	-
13466	KLHL4	NM_018117.3	1727	atgctccctccgcatatctatata	117821	-	structural molecule	-
13467	KPTN	NM_007059.3	2715	ttgctccctccgcatatctatata	117829	-	see also 7711 line	-
13468	LCPI	NM_002358.2	1798	ttgctccctccgcatatctatata	117832	-	see also 4942 line	-
13469	LSP1	NM_007243.1	1076	ctgctccctccgcatatctatata	117941	-	signal transduction	-
13470	MEFV	NM_000749.1	1680	ttgctccctccgcatatctatata	117950	-	zinc binding	-
13471	MG35136	NM_152427.1	613	ctgctccctccgcatatctatata	117957	-	Mediterranean fever(地中海熱)	-
13472	MTSS1	NM_014751.2	752	tcgagcgttaattgatgtct	117973	-	cell cycle, signal transduction kinase related	-
13473	MYBP1C	NM_002465.1	501	cagatctcagctcactataaag	118011	-	see also 1581 line	-
13474	MYBP2	NM_004533.1	1266	ttgctccctccgcatatctatata	118108	-	structural muscle	-
13475	MYBP3	NM_000256.2	3163	atgctccctccgcatatctatata	118140	-	structural muscle	-
13476	MYRIP	NM_015460.1	1799	cagatctcagctcactataaag	118165	-	cardiomyopathy(アテローム性心筋症)	-
13477	NGALD	NM_032041.1	449	ttgctccctccgcatatctatata	118188	-	see also 9066 line	-
13478	NEB	NM_004543.2	18552	ttgctccctccgcatatctatata	118516	-	structural muscle	-
13479	NEBL	NM_006393.1	2571	ttgctccctccgcatatctatata	118516	-	structural muscle	-
13480	PARVA	NM_018222.2	687	cagatctccgcatatctatata	118673	-	structural muscle	-
13481	PARVB	NM_013327.2	513	ttgctccctccgcatatctatata	118695	-	actin binding	-
13482	PARVG	NM_022141.3	988	ttgctccctccgcatatctatata	118707	-	actin binding	-
13483	PIP	NM_002652.1	272	ttgctccctccgcatatctatata	118719	-	actin binding	-
13484	PLEC1	NM_000445.1	12442	ctgctccctccgcatatctatata	118754	-	actin binding	-
13485	PLS3	NM_005032.3	1034	ttgctccctccgcatatctatata	118795	-	structural muscle	-
13486	RDX	NM_002506.2	1697	ttgctccctccgcatatctatata	118814	-	muscular dystrophy(筋ジストロフィ)	-
13487	SCIN	NM_033128.1	1597	ttgctccctccgcatatctatata	118872	-	structural cytoskeleton	-
13488	SEC24C	NM_004922.2	2636	ttgctccctccgcatatctatata	118908	-	structural cytoskeleton	-
				ttgctccctccgcatatctatata	118941	-	see also 3422 line	-

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13489	SMTN	NM_006932.3	513	ggcaagcgcctactatgaca	118957	-	-	-	-
13490	SMTA1	NM_003098.2	781	aggcactccacgattatgag	118973	-	-	-	-
13491	SN1B1	NM_021021.2	1648	ccctttgaccacatctatgaga	118991	-	-	-	-
13492	SN1B2	NM_006750.2	1568	tgctgcagagccctgattatg	119028	-	-	-	-
13493	SN1G1	NM_018967.1	747	cagtcagagcccttgattatgac	119035	-	-	-	-
13494	SN1G2	NM_018968.1	493	caggtctaaagctactatgaca	119073	-	-	-	-
13495	SORBS1	NM_006734.1	1896	tggctatcacacagatgag	119110	-	-	-	-
13496	SPTA1	NM_003127.1	4914	ccggatccgcctggattatgaca	119200	-	-	-	-
13497	SPTB	NM_000347.3	5791	tggctggacacgcgcgataaattc	119253	-	-	-	-
13498	SPTB1	NM_003128.1	2622	acgttggccacagctgattatcc	119289	-	-	-	-
13499	SPTB2	NM_006946.1	6918	gggcaacactgcctcttgattacc	119394	-	-	-	-
13500	SPTB4	NM_025213.1	1665	cagtcgcaggtactactacgatac	380328	-	-	-	-
13501	SPTB5	NM_016642.1	1022	caratagcgcctctatcatgacc	119400	-	-	-	-
13502	SVIL	NM_003174.2	829	ggagcgcgcctccgattattatc	119433	-	-	-	-
13503	TAGLN	NM_003186.2	654	ggccgcgcctccgagatctatca	119495	-	-	-	-
13504	TUN1	NM_006983.2	1265	tgccgcgcctctatctatcatc	119505	-	-	-	-
13505	TUN2	NM_015095.1	3140	tgctgcgcgcgcgaacgactca	119604	-	-	-	-
13506	TMOD1	NM_003275.1	35	agtcgcgcgcgcgcgcgcgcgc	119653	-	-	-	-
13507	TMOD2	NM_014245.2	364	ccgcgcgcgcctctctatgacc	119679	-	-	-	-
13508	TMOD3	NM_014247.3	1243	gtgcgaagagcagattgaaag	119719	-	-	-	-
13509	TMOD4	NM_013355.1	1055	caggccatcagcccgaaacactga	119731	-	-	-	-
13510	TMSNB	NM_021992.1	209	ggagaagcttgctgtaaacatc	119736	-	-	-	-
13511	TNN1	NM_003281.2	378	tgagctctccgtgggaagttcaag	119737	-	-	-	-
13512	TNN3	NM_000363.3	487	ttgctcttgaggcaagtttaag	119744	-	-	-	-
13513	TPM1	NM_000366.4	962	tggaccacgctctcaacgataag	119759	-	-	-	-
13514	UTRN	NM_007124.1	2880	ggagctgcgcgaacacatctaga	119821	-	-	-	-
13515	VASP	NM_003370.1	451	tcgtccgaggtctcaattatgac	120006	-	-	-	-
13516	VCL	NM_003373.2	2028	ctgcgatttgctactgctaataa	120050	-	-	-	-
13517	VILL	NM_015873.1	569	ggaggataaactgcgttcatgtaa	120086	-	-	-	-

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13554	ADD3	NM_016824.1	1729	gagagcactgcagctatcaaac	121234	—	see also 6949 line	—
13555	AKAP5	NM_004857.2	2025	aagcaagccacttgaacttca	121257	—	kinase related,	protein transporter
13556	GAP43	NM_002045.2	504	cagaagaagccactaaacttcc	121274	—	kinase related	calmodulin binding
13557	JGAP1	NM_003870.2	2335	tcgtctcccttgactactgttc	121324	—	see also 2627 line	—
13558	ITPKA	NM_002220.1	804	atagcctgcagctactactaga	121392	—	kinase related,	calmodulin binding
13559	ITPKB	NM_002221.2	916	ggagctcttcggagctagctaac	121405	—	kinase related,	calmodulin binding
13560	KCNH1	NM_002238.2	237	cggcgtctcaatgatactattt	121423	—	channel,	—
13561	KCNH5	NM_139318.3	1240	ggagctccatctgctcaaatc	121537	—	see also 9688 line	—
13562	KCNH1	NM_002248.3	1695	cctcaktcagcacttctatag	121578	—	channel	—
13563	KCNH2	NM_021614.2	1497	gacgaatgcttgatcataata	121600	—	channel	—
13564	KCNH3	NM_002249.3	1791	cagacgctactagtaattctt	121624	—	see also 1447 line	—
13565	KCNH4	NM_002250.2	936	cagcactcggcctctcaatcaag	121639	—	small conductance	calcium-activated
13566	NO51	NM_000820.1	4910	gtgcacacccctctgactctga	121822	—	channel	potassium channel
13567	NO52A	NM_000823.3	1902	agcctctgttgatgatacatt	121838	—	see also 417 line	—
13568	NRGN	NM_006176.1	267	aagccgcgcagcactctaga	121853	—	see also 419 line	—
13569	PDE1A	NM_005019.2	338	atgttaactcgtctgcactaaag	121861	—	signal transduction	calmodulin binding
13570	PDE1B	NM_000924.2	362	cctctgaagcctgtctactaga	121900	—	apoptosis,	calmodulin- dependent cyclic- nucleotide phosphodiesterase
13571	PHKA1	NM_002837.1	2904	atcttctgacttgactaattct	121967	—	signal transduction	dependent cyclic- nucleotide phosphodiesterase
13572	PHKA2	NM_00292.1	1513	cagatgacgcagacttcttc	122026	—	see also 1708 line	—
13573	PHKB	NM_000293.1	730	tcacactcgtctgtttgacaaa	122102	—	see also 257 line	—
13574	PPP3CA	NM_000944.2	1826	aagcctctgagccagatcaatga	122224	—	see also 261 line	protein phosphatase type
13575	PPP3CB	NM_021132.1	1563	aagctgttgatagatgaataga	122268	—	phosphatase, signal transduction , cell cycle, transcription_regulat or	protein phosphatase type 2C
13576	PPP3CC	NM_005005.3	1070	ctgtccagatgctcttatttc	122286	—	phosphatase	protein phosphatase type
13577	RGS1	NM_002922.2	231	agatgaatgaatgcttcaattct	122316	—	signal transduction , gpr	schizophrenia (精神分裂)

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13576	RGS16	NM_002928.2	270	agctcgactgagggcagtaacaa	122328	-	signal transduction cell cycle, epcr	-	calmodulin binding	-
13579	RGS2	NM_002823.1	291	ctgctagccagcaaatatgctct	122336	-	signal transduction cell cycle, epcr	-	calmodulin binding	-
13580	RGS4	NM_005613.3	345	caagcttcaaaagtcttttgag	122347	-	signal transduction epcr	-	calmodulin binding	-
13581	RYR2	NM_001035.1	12954	ctgttgcctgcagctcaaat	122643	-	see also 834 line	-	-	-
13582	SLC8A1	NM_021097.1	90	atgcggagtaactcttccacc	122717	-	see also 8064 line	-	-	-
13583	STRN	NM_003162.1	1778	atgcacacttgctttatgaat	122862	-	see also 2135 line	-	-	-
13584	STRN3	NM_014574.2	1182	atgcctgcagcaataacgttc	122909	-	see also 5767 line	-	-	-
13585	STRN4	NM_013403.1	1836	ttgcagcaacgctgttatgaca	122975	-	see also 5431 line	-	-	-
13586	IL18R1	NM_003855.2	789	tgagctggctctcatatcatg	122997	-	receptor activity, signal transduction	-	-	-
13587	IL18RAP	NM_003853.2	948	gtgagattccgctccatcaag	123032	-	receptor activity, signal transduction	-	-	-
13588	IL1R1	NM_000877.2	1229	aggacctatagagcaabaaat	123118	-	receptor activity, signal transduction	-	interleukin-1, Type 1, activating receptor	-
13589	IL1RAP	NM_002182.2	715	gtgcacaaacgpcunacatttga	123159	-	see also 1392 line	-	diabetes(糖尿病)	-
13590	IL1RAPL1	NM_014271.2	767	ggagcctgttgatcaaatgt	123208	-	receptor activity, signal transduction	-	mental retardation(精神遅滞)	-
13591	IL1RAPL2	NM_017416.1	1727	ctgactcgatattatctctgc	123300	-	see also 6987 line	-	-	-
13592	IL1RL1	NM_003856.2	1167	agggcacacgtaagactaatgag	123369	-	receptor activity, signal transduction	-	-	-
13593	IL1RL2	NM_003854.2	1270	ctgatagacactatgtctata	123454	-	receptor activity	-	-	-
13594	MYD88	NM_002468.2	789	gcgactgtccccatcaagtaca	123479	-	receptor activity, signal transduction	-	interleukin-1, Type 1, activating receptor	-
13595	SIGIRR	NM_021805.1	485	gttcacagcaatgaagtctatgc	123480	-	-	-	atherosclerosis(粥状硬化症)	-
13596	TLR1	NM_003263.2	1078	ttggcatatacaactgtatgattt	123518	-	see also 2214 line	-	-	-
13597	TLR10	NM_030956.1	2378	atgtcgaattccacgcatttatt	123611	-	receptor activity	-	interleukin-1, Type 1, activating receptor	-
13598	TLR2	NM_003264.2	1570	ttgtaatttgcgcacactcaaga	123668	-	receptor activity, signal transduction	-	interleukin-1, Type 1, activating receptor	-
13599	TLR6	NM_006088.2	583	ttgctcactgcacbaatgat	123702	-	receptor activity, signal transduction	-	rheumatoid arthritis(関節リウマチ)	-
13600	IL1R2	NM_004633.3	235	gcgcttgcctgttgatgag	123743	-	receptor activity	-	lipoprotein binding	-

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13601	IL2RA	NM_000417.1	338	aagcgggctcctctctatgctct	123773	-	receptor activity, apoptosis, cell cycle, signal transduction	Rel A homodimer	-
13602	IL2RB	NM_000878.2	561	gagacacacagatgcacataag	123792	-	receptor activity, signal transduction	interleukin-2 receptor	rheumatoid arthritis (関節リウマチ), rheumatoid arthritis (関節リウマチ), agammaglobulinemia (無 γ グロブリン血症), thymic epithelial hypoplasia (胸腺上皮細胞形成不全症), immunodeficiency (免疫不全症), severe combined immunodeficiency disease (重
13603	IL2RG	NM_000206.1	75	gttggcctgcacacagaattct	123809	-	receptor activity, signal transduction	interleukin-7 receptor	
13604	IL10RA	NM_001558.2	697	ctctcgcctcccaagtacaag	123845	-	receptor activity	interleukin-10 receptor	
13605	IL10RB	NM_000623.3	552	atggcctataatgtgcatact	123870	-	receptor activity, signal transduction	interleukin-10 receptor	
13606	IL8RA	NM_000634.2	566	gcctcctgcctcgaattgtttt	123887	-	receptor activity, gpcr, signal transduction	interleukin-8 receptor	
13607	IL8RB	NM_001557.2	461	aagatctctagttaattcaattac	123901	-	receptor activity	interleukin-8 receptor	
13608	IL6R	NM_000565.2	1210	ggctcagcagctcaagaacatc	123958	-	receptor activity, signal transduction		
13609	IL6ST	NM_002184.2	1692	ccctctacatgcacacttaaga	124022	-	see also 1365 line		
13610	CSF2RB	NM_000395.1	2554	ggagccgcctctgagatcaaga	124073	-	receptor activity, signal transduction	interleukin-5 receptor	pulmonary alveolar proteinosis (肺胞蛋白症)
13611	IL5RA	NM_000564.2	1588	gttagcgcacacatttttgagg	124102	-	receptor activity, signal transduction		
13612	IL4R	NM_000418.1	991	ccgcctcgtcgatataaattcc	124120	-	receptor activity, signal transduction	receptor signaling protein	diabetes (糖尿病)
13613	IL3RA	NM_002183.2	481	cagaaattgtaccgctatcgagt	124129	-	receptor activity		
13614	IL9R	NM_002186.2	883	tgttagagagagcgctatcaca	124151	-	receptor activity, signal transduction		
13615	IL21R	NM_002198.2	771	gatttaccctgcctatctcaga	124158	-	receptor activity		
13616	IL17R	NM_014339.3	506	tttgtcgttaagtttgatgtctt	124167	-	receptor activity, signal transduction	interleukin-17 receptor	
13617	IL12RB2	NM_001559.2	1859	ctgcctccctcctattcaaat	124208	-	receptor activity, signal transduction	interleukin receptor	high molecular weight B-cell growth factor
13618	IL13RA2	NM_000640.2	142	tggctatcgatgctctatccc	124200	-	receptor activity	receptor ligand	
13619	IL19RA	NM_002189.2	245	gactgcactctttgactctcgg	124283	-	receptor activity, signal transduction		
13620	IL17RB	NM_018725.2	958	gatttaccgctatctctaatg	124321	-	see also 7582 line		

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13621	IL18BP	NM_005690.2	1038	cgcgcctcctcagcttagaac	124335	-	-	receptor activity, gpnr, signal transduction	-	resistance to or association with human immunodeficiency virus(HIV)阻害、HIV抵抗性
13622	CCR5	NM_005791.1	1352	ccgagcgcagcagctcagttac	124350	-	-	receptor activity, gpnr, signal transduction	coreceptor	-
13623	CCR6	NM_004367.3	1346	caagtgcagcgcagctaaagaca	124376	-	-	gpnr, signal transduction	-	-
13624	CCR8	NM_005201.2	1158	ccgttcctccagctagctactaca	124398	-	-	gpnr, signal transduction	coreceptor	-
13625	CCR9	NM_006641.2	150	tggagagctaacgttaactcaac	124402	-	-	see also 4895 line	-	-
13626	CCR11	NM_016557.2	732	gggtttctctactatcacagc	124443	-	-	receptor activity, gpnr, signal transduction	-	-
13627	CCR2	NM_016602.1	568	acgagcgttgctgcctcacttcc	124454	-	-	gpnr, signal transduction	C-C chemokine receptor	Peutz-Jeghers syndrome(ポイツ・イエガー症候群)
13628	CXCR3	NM_001504.1	613	tgcctccagcagcttactctc	124460	-	-	receptor activity, gpnr, signal transduction	C-X-C chemokine receptor	-
13629	CCRP2	NM_001296.3	948	gtctcttgcttccatcacatct	124473	-	-	receptor activity, gpnr, signal transduction	C-C chemokine receptor	-
13630	CCL13	NM_005408.2	350	aagctcacacccctgaagacttga	124478	-	-	receptor activity, gpnr, signal transduction	chemokine receptor	-
13631	CCR1	NM_001295.1	816	tggaccctccagcttactctat	124499	-	-	receptor activity, gpnr, signal transduction	C-C chemokine receptor	-
13632	CCR2	NM_000647.3	264	ctgtgtctctctcatctaataaa	124510	-	-	receptor activity, gpnr, signal transduction	-	rheumatoid arthritis(関節リウマチ)、atherosclerosis(粥状硬化症)
13633	CCR3	NM_001837.2	995	caagagatcacagctatagcttgc	124526	-	-	receptor activity, gpnr, signal transduction	-	-
13634	CCR4	NM_005508.2	54	atgaacccacagctatagctgaga	124534	-	-	see also 3848 line	-	-
13635	CCR7	NM_001836.2	296	tgtctgtctgacataatctat	124556	-	-	receptor activity, gpnr, signal transduction	C-C chemokine receptor	Peutz-Jeghers syndrome(ポイツ・イエガー症候群)
13636	CMKLR1	NM_004072.1	960	caagtttgcctcgttcacatgag	124569	-	-	receptor activity, gpnr, signal transduction	chemokine receptor	-
13637	CX3CR1	NM_001337.2	916	gtgctgcagcagcttcaattgag	124587	-	-	receptor activity, gpnr, signal transduction	coreceptor	atherosclerosis(粥状硬化症)

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13638	CXCR4	NM_003467.1	90	tgagagagctcagatgataacact	124591	-	-	coreceptor	Pautz-Jeghers syndrome(ポイツ・イェーザ候群), WHIM syndrome(WHIM症候群)
13639	GPR17	NM_005291.1	184	caggtctctatcaccaactctcc	124608	-	receptor, activity, gpdr, signal transduction	purinergic nucleotide receptor, G-protein coupled protein coupled chemokine receptor	-
13640	XGRI	NM_005283.1	563	cgcgcagctgcaagctcaactctcg	124610	-	receptor, activity, gpdr	interferon-gamma receptor	-
13641	IFNGR1	NM_000416.1	1463	gaactcttgattgattatgac	124655	-	receptor, activity, signal transduction	interferon-gamma receptor	atypical mycobacteriosis(AM症)
13642	IFNGR2	NM_005534.1	953	cagcagcgttcccaactgatttc	124659	-	receptor, activity, signal transduction	interferon-gamma receptor	atypical mycobacteriosis(AM症)
13643	IFNARI	NM_000629.1	418	tgttatgattgctgactcaattac	124684	-	receptor, activity, signal transduction	interferon-alpha/beta receptor	-
13644	IFNAR2	NM_000874.2	667	gcgggacacacaaactgtttcagt	124739	-	receptor, activity, signal transduction	interferon-alpha/beta receptor ligand	-
13645	IL22RA1	NM_021258.2	1496	aagggacacacaaagttgctcagt	124778	-	receptor activity	-	-
13646	GRM1	NM_016441.1	1491	tgttttcaaacgcatcacatg	124798	-	receptor activity	-	-
13647	CTGF	NM_001901.1	971	atgagacacataccagctcaatt	124855	-	-	insulin-like growth factor binding	-
13648	CYR61	NM_001554.3	690	gggtctgtgacagaggtatgctc	124867	-	-	insulin-like growth factor binding	-
13649	ESM1	NM_007036.2	309	ctgagctgacgctctctaatgg	124881	-	-	insulin-like growth factor binding	-
13650	IGFALS	NM_004970.1	1777	cgcgctacacactccacacactc	124894	-	-	insulin-like growth factor binding	-
13651	IGFBP1	NM_000596.1	850	tggcgctgtaccttggaatgg	124902	-	signal transduction	Hepatocyte nuclear factor 1	alcoholism(アルコール依存症)
13652	IGFBP3	NM_000598.2	717	tagctccttcgctgagagaatgg	124911	-	-	insulin-like growth factor binding	breast cancer(乳癌)
13653	IGFBP4	NM_001552.1	644	aggtgtaccaccccaacacacgc	124914	-	signal transduction	insulin-like growth factor binding	-
13654	IGFBP6	NM_002178.1	385	ctgttgacagaaatctcctcag	124923	-	-	insulin-like growth factor binding	-
13655	IGFBP7	NM_001553.1	759	atgattcgtactcactcatttc	124929	-	see also 1059 line	insulin-like growth factor binding	-
13656	NOV	NM_002514.2	380	cgcgctgtatgagagataactcgt	124930	-	-	insulin-like growth factor binding	-
13657	PRSS11	NM_002775.2	590	ctgcgctgtatgagagataactcgt	124945	-	see also 1812 line	-	-
13658	WISP1	NM_003882.2	858	tggctatccacactctatctatg	124972	-	see also 2639 line	signal transduction	arthritis(関節炎)
13659	WISP3	NM_003880.2	858	cagctctgctgagcagcaatttt	125002	-	signal transduction	amine oxidase (flavin-containing)	-
13660	FIBP	NM_004214.4	148	ggggacacagcgccttatctcgcgc	125018	-	signal transduction	-	-
13661	L1BP1	NM_000627.1	4228	tcgttgatgacgctctgattttt	125129	-	see also 420 line	-	-

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13662	AVPRIA	NM_000706.3	3175	tggaagagctgcctaaatcttc	125137	-	kinase, related, apcr, receptor activity,	vasopressin receptor	-
13663	AVPRIB	NM_000707.2	1404	tgctctcgtctggagcaaatgc	125144	-	kinase, related, apcr, receptor activity,	vasopressin receptor	-
13664	COB22	NM_004768.1	1958	ctctctctcgtctggagcaaatgc	125210	-	see also 3276 line	-	-
13665	GN2L1	NM_006090.2	392	gcctctctcgtctggagcaaatgc	125243	-	see also 4244 line	-	-
13666	UM	NM_006451.1	970	agaactctggagcgcgtatctctc	125273	-	see also 4529 line	-	-
13667	CDK5RAP	NM_025197.2	190	acgtctcgcgcgaagatcaatgc	125285	-	kinase, related, cell cycle	-	-
13668	CGI-121	NM_016058.1	590	ttgactctctatctttatgaat	125298	-	kinase, related	-	-
13669	NBEA	NM_015678.2	3778	cggatgactgaacttaacttgc	125392	-	kinase, related, receptor activity,	-	-
13670	PTPRR	NM_002849.2	1426	gaagctcaacgctatctcttcca	125587	-	phosphatase, signal transduction	-	-
13671	DSRCL1	NM_005822.1	342	caaacctctctcgtataaaccttca	125616	-	see also 4060 line	-	-
13672	MYO22	NM_016599.2	811	ctgcagacgctctcttaataagc	125643	-	see also 6939 line	-	-
13673	AKAP11	NM_016248.2	2810	gtttttctcgtatctgaataatga	125725	-	kinase, related, phosphatase	-	-
13674	LILRB1	NM_006669.2	1431	atgaccactgcctctcaagatca	125841	-	receptor activity	-	-
13675	PP1R16B	NM_015568.2	1781	atgagactcgtctatcttaacag	125857	-	phosphatase	-	-
13676	NAKAP95	NM_014371.1	1344	agagctactctcaatcaagaccc	125874	-	signal transduction	-	-
13677	ARIH1	NM_005744.2	1114	taaggtgaacgcgcgtcttaagc	125900	-	see also 3634 line see also 3984 line	-	-
13678	BIRC7	NM_022161.2	438	ttgactctgactctctctatga	125928	-	apoptosis, kinase, related	-	-
13679	CASP2	NM_001224.3	137	ctgttttgagcgaattctaga	125934	-	apoptosis	-	-
13680	DNM7L	NM_013989.2	744	acgagctgagcgggtccactcc	125965	-	transcription, regulat or	-	-
13681	HDAC10	NM_032019.3	1599	ctgcaacgcgcgtatctacatt	125981	-	transcription, regulat or	-	-
13682	PREX1	NM_020820.2	1051	atggacacagctttctcttctagc	125988	-	-	-	-
13683	SERPINB1	NM_080474.1	167	agctactactctcaacgaattt	126032	-	trypsin inhibitor	-	-
13684	APBB1	NM_001164.2	119	ctgacgcagtctgcactaatcc	126065	-	transcription, regulat or, cell cycle, signal transduction	-	-
13685	BAIAP1	NM_004742.1	771	ctggaagtctggcacaacttgagc	126091	-	-	-	-
13686	CTBP1	NM_001328.1	90	gcctctcgcctcctcgtatctgaac	126148	-	protein C-terminus binding	-	-
13687	DLG4	NM_001365.1	1914	ggaacccgaagcgaattctgctc	126169	-	see also 927 line	-	-
13688	HSPB7	NM_014424.3	946	agcgtctcaccctccatcaagaac	126187	-	protein C-terminus binding	-	-

dementia Alzheimer type(アルツハイマー型病
呆), Alzheimer disease(アルツハイマー病)

melanoma(メラノーマ)
hologoprosenchyma(室前間隙症)

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13689	ITGB1BP1	NM_004753.2	214	aactatcgaatacaatcactaataa	126193	-	see also 3274 line	apoptosis, signal transduction	-	-
13690	ITGB3BP	NM_014286.3	528	tgcacagctatgaattccttaaa	126218	-	-	transcription regulator	-	-
13691	MILT4	NM_005936.1	215	tccgaagctctgcggagaattt	126222	-	-	protein C-terminus binding	-	leukemia (白血病)
13692	PRKG2BP	NM_012407.1	358	ctcttcctctctctatcctctcc	126302	-	-	signal transduction	-	-
13693	SNX17	NM_014745.2	896	atgctcagctgctcactcagattt	126329	-	-	see also 5311 line	-	-
13694	TOPBP1	NM_007027.2	1047	atgcacattgcctgaagtaataa	126366	-	-	see also 4919 line	-	-
13695	TRK3	NM_006458.2	2794	tgtgtagaacgaattcctctaac	126472	-	-	see also 4530 line	-	-
13696	ELMO1	NM_014800.8	2074	ctctccgttgcagatctcaaacg	126523	-	-	see also 5594 line	-	-
13697	LRFP2	NM_006309.1	1066	ggggacacacagcagcttaaga	126563	-	-	Transcription factor AP-2 alpha binding	-	epidermolysis bullosa simplex (真綿型表皮水疱症)
13698	KRT14	NM_000526.3	521	cagcgcctctctgagataaaga	126586	-	-	protein kinase C binding	-	-
13699	YWHAB	NM_003404.3	769	cagctaacaccccaattgctct	126595	-	-	-	-	-
13700	YWHAG	NM_012479.2	437	ccttgcgtaccggagagaagatag	126601	-	-	kinase related, apoptosis, signal transduction	-	-
13701	YWHAH	NM_003405.2	811	taactgaactgcacacactaac	126606	-	-	hematopoietic-associated factor 1A complex	-	familial deficiency of IgG receptor (IgG 受容体) 家族性欠損症
13702	FCGR1A	NM_000568.2	524	tgggaagaactcgtctcacaataa	126616	-	-	transmembrane receptor	-	rheumatoid arthritis (関節リウマチ)
13703	FCGR2B	NM_004001.2	910	ttagctctgagacacactccc	126629	-	-	receptor activity, signal transduction	-	atopy (アトピー性皮膚炎)
13704	FCGR3A	NM_000555.4	500	cagctctgagctactctatgta	126631	-	-	receptor activity, signal transduction	-	-
13705	FCER1A	NM_002001.2	886	aatctcctcctgaggaagt.ctcgg	126663	-	-	receptor activity, signal transduction	-	-
13706	FCER1G	NM_004106.1	84	gagagctcactcctctctatata	126668	-	-	receptor activity, signal transduction	-	-
13707	FCER2	NM_002002.3	566	gagagaagcagaactctcagattt	126676	-	-	receptor activity, signal transduction	-	-
13708	LGALS3	NM_002306.1	397	gttctcctgactctgttaacat	126681	-	-	galactose binding lectin	-	breast cancer (乳癌)
13709	MS4A2	NM_000139.2	522	tgaggagaagggagataaccatcc	126708	-	-	receptor activity, channel, signal transduction	-	leukemia (白血病)

13710	CD44	NM_000810.2	233	ctggcgcagcatgattgatat	126722	-	hepatocellular carcinoma(肝癌), colorectal cancer(大腸癌), non-Hodgkin lymphoma(非ホジキンリンパ腫), breast cancer(乳癌), neuroblastoma(神経芽細胞腫), Alzheimer disease(アルツハイマー病), colorectal cancer(結腸直腸癌), leukemia(白血病), osteosarcoma(骨腫性骨肉腫), gastric cancer(胃癌), skin cancer(皮膚癌), Hodgkin's disease(ホジキン病), breast cancer(乳癌), Ehlers-Danlos syndrome(エーラー-ダンロス症候群),
13711	FN1	NM_002026.1	2091	aaagtctctctcgaagtattta	126806	-	hyalronic acid binding
13712	GP6	NM_016363.3	852	tacggctctctgctcctaatact	126907	-	-
13713	ITGA10	NM_003637.3	1423	tggggctctctgattgagatact	126921	-	receptor activity
13714	ITGA11	NM_012211.2	1890	caagatcacacgagcaattggaccc	126975	-	receptor activity, signal transduction
13715	ITGA2	NM_002203.2	850	ggcgcgcgaagctctcraaagt	127013	-	see also 5198 line
13716	NID2	NM_007361.2	2718	gtccgcgcgaagctctcraaagt	127146	-	receptor activity, signal transduction
13717	PCOLCE	NM_002593.2	1151	tgcctcgaagctctcraaagt	127183	-	see also 5002 line
13718	SERPINH1	NM_001235.2	943	ccgcgcgaagctctcraaagt	127195	-	collagen binding
13719	A2M	NM_000014.3	1968	ctgcgcgaagctctcraaagt	127241	-	serpin
13720	CGI-109	NM_016040.2	734	atgcgcgaagctctcraaagt	127288	-	see also 1 line
13721	CGI-109	NM_016040.2	735	atgcgcgaagctctcraaagt	127294	-	see also 8505 line
13722	G	NM_017510.3	108	aagcgcgcctcattcraaagt	127300	-	see also 7016 line
13723	IL1RL1LG	NM_006556.2	278	aagcgcgcctcattcraaagt	127303	-	receptor activity, signal transduction
13724	HGC23911	NM_144876.1	144	tggcgcgcctcattcraaagt	127307	-	-
13725	P24B	NM_007364.1	376	aagcgcgcctcattcraaagt	127332	-	-
13726	RNP24	NM_006815.2	73	cgctcgcgcctcattcraaagt	127342	-	protein transporter
13727	TMP21	NM_006821.4	538	atgcgcgcctcattcraaagt	127358	-	protein transporter
13728	HP-S4	NM_022081.4	1637	atgcgcgcctcattcraaagt	127376	-	see also 8266 line
13729	RHBB	NM_002192.1	1176	aagcgcgcctcattcraaagt	127392	-	inhibin
13730	S100B	NM_006272.1	296	tggcgcgcctcattcraaagt	127407	-	kinase, related, apoptosis
13731	IP07	NM_006391.1	530	cgctcgcgcctcattcraaagt	127420	-	see also 4478 line
13732	IP08	NM_006391.1	2075	cgctcgcgcctcattcraaagt	127559	-	signal transduction
13733	KPNB3	NM_002271.3	751	cgctcgcgcctcattcraaagt	127602	-	see also 1468 line
13734	RANBP2	NM_006267.3	9356	tggcgcgcctcattcraaagt	127612	-	see also 1359 line
13735	RANBP3	NM_003624.1	879	aagcgcgcctcattcraaagt	127633	-	signal transduction
13736	SNAP	NM_014723.2	1099	cgctcgcgcctcattcraaagt	127773	-	syntaxin-1 binding
13737	PLDN	NM_012388.2	262	tggcgcgcctcattcraaagt	127800	-	-
13738	STVBP2	NM_005445.1	890	tggcgcgcctcattcraaagt	127800	-	syntaxin-3 binding
13739	SNAPAP	NM_012343.3	287	cgctcgcgcctcattcraaagt	127817	-	-
13740	INAPF	NM_012336.2	854	cgctcgcgcctcattcraaagt	127836	-	see also 5257 line

13741	TMPO	NM_003276.1	1559	ctgaatccgaactgaactctct	127871	lamin/ chromatin binding	-
13742	NLGN2	NM_020795.2	639	tgagggagcggagacagcttc	127884	-	-
13743	TNFRSF10A	NM_003844.2	325	ggctccacagactcaagattt	127894	receptor activity, apoptosis, signal transduction, kinase related	death receptor
13744	TNFRSF10B	NM_003842.3	1289	gagacagctgcttgaactcttgc	127916	-	-
13745	DCTN6	NM_006517.2	237	tgccgaaggaactcaataaag	127919	-	-
13746	GGA2	NM_015044.2	708	agctctcaacccgttaatacaag	127947	-	-
13747	GGA3	NM_014001.2	905	ggccacgacacagctgtctcc	127960	-	-
13748	APC	NM_000038.2	1585	agctgagctactctctctgaag	128034	-	-
13749	APC	NM_005883.1	4521	ctctccacgagacactctctgc	128246	signal transduction, cell cycle	-
13750	PKP1	NM_000299.1	1509	ccgccagacactctgaactact	128269	-	-
13751	GRZB	NM_001463.2	780	aagacactttctcgacacattta	128277	receptor activity, signal transduction	transmembrane receptor
13752	FRZ	NM_012284.1	471	attcttcgcttgagacactgaag	128301	-	-
13753	CSE1L	NM_001316.2	209	ccagctccgctggagcactttc	128323	-	-
13754	RBX1	NM_014349.2	196	caagatccgctctactctgaaga	128434	-	-
13755	ABO28190	NM_014453.3	553	tacgacttactctccctgaacaa	128438	-	-
13756	ABT61	NM_022548.2	851	ccgactctccgctgactcttgc	128467	-	-
13757	ABT62	NM_145804.1	1201	tgactccgagctgggttaacacc	128505	-	-
13758	AKAP10	NM_007202.2	271	agcttcacactctgacacttcc	128517	-	-
13759	AKAP9	NM_005751.3	1459	cggttgaacactgatactgac	128590	-	-
13760	AMFR	NM_001144.3	1840	asgctcgcaactcttcttgac	128852	-	-
13761	ANKFY1	NM_016376.2	1177	caftcgaacaaactgacttgaag	128863	-	-
13762	ANXA11	NM_001157.2	1686	acttcttcctctgggaactctca	128934	-	-
13763	APB2	NM_005903.2	1195	atgacactcttgactatacaaac	128939	-	-
13764	APB3	NM_004866.2	308	caatggcttgactctgacttgagt	128952	-	-
13765	APB8	NM_006051.2	1245	cgaaagtccagggacactctaat	128962	-	-
13766	APP	NM_000484.1	1602	tcagactctcaactctctcaata	128969	-	-
13767	APPL	NM_012095.1	1623	atgaacactatcccaaacattta	129069	-	-
13768	ARHGDIA	NM_004303.3	440	caggtttaaccggagaaagattg	129068	-	-
13769	ASE-1	NM_012099.1	1095	tgagcttcgacaaactgactgt	129092	-	-
13770	AVEN	NM_020371.1	404	tgagcttgacttaaacactttta	129101	-	-
13771	BAG1	NM_004323.2	697	atgcttctggactctcttaatt	129118	-	-
13772	BAG2	NM_004262.2	426	asgacactctccctctgactgtg	129125	-	-
13773	BAG4	NM_004974.2	861	tgagcttgactctccactctcc	129148	-	-
13774	BAG5	NM_004973.1	574	ctctgaactctgacttgatgaag	129187	-	-

Alzheimer disease(アルツハイマー病)

Alzheimer disease(アルツハイマー病)

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13775	BA1	NM_001702.1	1902	ggtctccagaccacaggtatct	129217	-	see also 1114 line	-	hepatocellular carcinoma(肝臓), non-hodgkin lymphoma(非ホジキンリンパ腫), malignant mesothelioma(悪性中皮腫), lymphoma(リンパ腫)
13776	BCI10	NM_003921.2	941	tggaccaccttgatgaatctt	129233	-	apoptosis, cell cycle, kinases related	-	-
13777	BCI20	NM_020396.2	611	cgctcagcttgatgacacagc	129238	-	apoptosis	-	-
13778	BCI69	NM_181842.2	1229	ggcagcagctgagcttgacagc	129240	-	see also 10257 line	-	-
13779	BTBD1	NM_025238.1	1119	ggcagcagctgagcttgacagc	129263	-	-	protein binding	-
13780	BTBD11	NM_152922.1	379	cgcagcagctgagcttgacagc	129268	-	-	-	-
13781	BTBD12	NM_032444.1	2267	cagcagccccaactccaatgc	129332	-	-	-	-
13782	BTBD14A	NM_144053.2	1688	ggcagctgagcgcggaatgctg	129345	-	see also 9728 line	-	-
13783	BTBD14B	NM_052876.2	1189	gcgctctcccgctgaacttat	129348	-	-	-	-
13784	BTBD2	NM_017897.2	1060	gaagccagatgagatgaattgca	129359	-	-	protein binding	-
13785	BTBD3	NM_014962.2	1370	cggctgataactctcaatgca	129391	-	-	-	-
13786	BTBD5	NM_017658.1	1169	gagctgcgcgcgctattttcaag	129406	-	see also 7085 line	-	-
13787	BTBD6	NM_032771.1	1168	gtagcagaaaggatgattatgc	129436	-	receptor activity	-	-
13788	BTBD9	NM_152733.1	1067	cgcttcgcagctcgagatgaagc	129454	-	see also 9935 line	-	-
13789	C3P1	NM_021633.2	1213	atgagcgttcgcgccttgattcca	129538	-	see also 8156 line	-	-
13791	C6orf46	NM_181842.1	1523	cgatctgagccagctgaactgaac	129558	-	see also 10256 line	-	-
13792	CALB1	NM_004929.2	926	cgaagcagctctgctcttcttc	129573	-	see also 3423 line	-	-
13793	CALM1	NM_006888.2	926	acgttcacatcttgacaaactaac	129582	-	-	protein binding	-
13794	CALM3	NM_005184.1	538	cagctcaattatgaagatgtttg	129585	-	-	protein binding	-
13795	CARD11	NM_032415.2	2088	cggattgagcgttgatgctctgc	129618	-	see also 9185 line	-	-
13796	CARD14	NM_024110.2	1749	aggccagccacacactggatgac	129635	-	apoptosis, kinases related	-	-
13797	CBLB	NM_170562.2	1511	ggcagcagcagcccaactcctgc	129676	-	signal transduction	zinc binding	diabetes(糖尿病)
13798	CBLG	NM_012116.2	1226	ctggaggcgcctggagctctctcc	129726	-	-	zinc binding	-
13799	CCIN	NM_005899.1	1260	tgcgcccaaggcgtgatgctctcc	129764	-	-	structural constituent of cytoskeleton	-
13800	CD2	NM_001767.2	462	atggactgaccgcgaattaaac	129791	-	receptor activity, signal transduction	USF43/USF44 complex	-
13801	CD244	NM_016382.1	1039	ggggagcagccactctactctatg	129824	-	see also 6848 line	-	-
13802	CD28	NM_006135.1	317	acgcacactgcgtgcaacctgac	129830	-	receptor activity, signal transduction	receptor activity, protein binding	rheumatoid arthritis(関節リウマチ), diabetes(糖尿病)
13803	CD32	NM_007342.2	161	caagcagctcttcgcatgacaga	129843	-	receptor activity, signal transduction	receptor signaling	leukemia(白血病), immunodeficiency(免疫不全症), diabetes(糖尿病)
13804	CD48	NM_001782.2	304	gttgcacactgaactctctctaac	129856	-	-	protein binding	-
13805	CD58	NM_001779.1	4166	caagcactgagagctctaaatgat	129884	-	-	protein binding	Alzheimer disease(アルツハイマー病)
13806	CD8B1	NM_004931.2	330	cggagatgcagcaggttactctt	129902	-	receptor activity, signal transduction, kinase related	-	lymphoma(リンパ腫)

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13807	QC37	NM_007065.3	750	capacatctctcgaattat	129919	-	cell cycle, kinase related	protein binding	-
13808	CIB1	NM_006384.2	419	atattacacacttaccaga	129908	-	transcription, regulation or	RNA polymerase II transcription factor	-
13809	CKN1	NM_000089.1	615	cdgtctccagcttatgctata	129987	-	see also 8273 line	-	-
13810	CKT5F1	NM_011327.4	593	tgcatctctccttgattgatt	130018	-	-	-	-
13811	CLSPN	NM_022111.2	3742	atgcacagtcaccatgattgatt	130088	-	-	-	-
13812	CKN1	NM_006314.1	1489	atgtgtgtctctctctctac	130105	-	-	protein binding	-
13813	CRHP	NM_001862.2	494	ctcagcgtacatagattt-tgt	130119	-	signal transduction	-	-
13814	CHI1	NM_014335.1	494	ctgcgggtttcagatgattatg	130138	-	-	-	-
13815	DAG1	NM_004393.1	1904	ccgcactcagcggccctatttc	130154	-	receptor activity	laminin receptor	-
13816	DBT	NM_001918.1	910	ttgtctgttgatataactctcc	130185	-	-	protein binding	-
13817	DLG5	NM_004747.2	1892	ttgcctcttaagctctcaatgct	130338	-	cell cycle	-	-
13818	DLG2	NM_004745.3	2092	ccgctgtctcggagatctcact	130387	-	-	protein binding	-
13819	DMN	NM_015286.4	2369	agagcccgcttgatttctgcgc	130432	-	-	-	-
13820	DMX1	NM_005509.3	4503	caatcacatgcgctactctttgc	130607	-	-	-	-
13821	DNAJC7	NM_003315.1	358	aaaccctagatcagctatataa	130750	-	see also 2247 line	-	-
13822	DNLC2B	NM_130897.1	154	cgagctctaaagctgattttgc	130773	-	see also 9555 line	-	-
13823	DOX2	NM_003974.1	1017	tcgacctcacacatctatgata	130782	-	see also 2720 line	-	-
13824	DPE1	NM_001937.3	580	gtcccgatgctctgactagact	130870	-	-	protein binding	-
13825	DRP1	NM_017644.2	1098	caatttaattgatacactatctc	130850	-	see also 7070 line	-	-
13826	DRPLA	NM_001940.2	578	caatcccccctagatctatccac	130850	-	see also 1238 line	-	-
13827	DTNA	NM_001900.2	1147	agctctcagctctgactgatttgc	130927	-	signal transduction	-	-
13828	DTNB	NM_021907.3	333	atgctctcagctctactactac	130958	-	see also 8186 line	-	-
13829	EMILIN1	NM_007048.1	2768	tgggaccgagctcgggaattctg	131009	-	-	-	-
13830	EMILIN2	NM_032048.1	2348	tgggagctgacgggggtgtttac	131048	-	see also 9073 line	-	-
13831	ENG	NM_000118.1	462	gagatgggtctcgtctgactatc	131051	-	-	protein binding	-
13832	ESPL1	NM_012291.3	1054	asagagctctatagactttatgc	131078	-	apoptosis	-	-
13833	EVIS	NM_005666.2	1065	gtgtttgtcttgatgatacact	131170	-	see also 3930 line	-	-
13834	FBI1	NM_015898.2	1870	ccgcaccccgctgactcttccca	131204	-	-	-	-
13835	FBX1.2	NM_012157.2	871	ctcccgctctctccatttgcct	131229	-	-	-	-
13836	FLJ10572	NM_018143.1	470	aaactcatcctgcgtctctttgac	131243	-	see also 7277 line	-	-
13837	FLJ11078	NM_018316.1	1803	gtgtctgtctgtgcttacttact	131290	-	-	-	-
13838	FLJ12587	NM_022480.2	1755	ttggacccagagctctctagact	131296	-	see also 8402 line	-	-
13839	FLJ13057	NM_178438.3	323	cgggcagagatctcttacttgt	131298	-	-	-	-
13840	FLJ13063	NM_024742.1	1420	acagccagagactctctatctac	131303	-	see also 8721 line	-	-
13841	FLJ14360	NM_032775.2	312	ttgtctctctctctgattctcttc	131312	-	-	-	-
13842	FLJ31322	NM_152387.1	317	ttgtctctctcttaaaactcttt	131345	-	see also 9847 line	-	-
13843	FMOD	NM_002023.2	145	atgacctctaccctatctggacc	131360	-	-	protein binding	-
13844	FYB	NM_001466.2	595	aaagcctctagcccaactcttgc	131369	-	signal transduction, kinase related	protein binding	-
13845	GTP2	NM_005010.1	508	ctggacacagctgtctgactct	131403	-	-	translation	-

Rendu-Osler-Weber disease (ランデュー・オスラー・ウエーバー病), hereditary hemorrhagic telangiectasia (遺伝性出血性毛細血管拡張症)

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13881	KCNB2	NM_004770.2	816	atcgccgactataactcaaacg	132350	-	channel	protein binding	-
13882	KCNB1	NM_004976.2	1372	ggacacattccggagatgata	132413	-	see also 3470 line	-	-
13883	KCNB2	NM_139136.2	1848	ggagctgtgacatctcttc	132430	-	channel	-	-
13884	KCNB3	NM_004977.2	1285	cgaggcagcactccggagatca	132463	-	channel	voltage-gated potassium channel	-
13885	KCNB4	NM_004978.2	1692	ggagcagcactcgcgagtgatacc	132472	-	-	-	-
13886	KCNB1	NM_004979.3	2005	cgagctgtgactcatatctcaca	132485	-	-	-	-
13887	KCNB2	NM_012281.2	1735	tgtgcgtgtgtcgtatgtatc	132496	-	see also 5255 line	-	-
13888	KCNB3	NM_004980.3	2118	ctctccctcgtcgtatgaaga	132536	-	see also 3473 line	-	-
13889	KCNB1	NM_002236.4	751	gtgtctgtatggatgtactcttt	132546	-	channel	-	-
13890	KCNB4	NM_133490.2	411	tcttgcagctctgcgagtgatac	132553	-	channel	-	-
13891	KCNB3	NM_173805.1	883	cagtcgcgactcgaatgtatac	132566	-	channel	-	-
13892	KCNB1	NM_002251.3	410	ctgtccagcggagacacactatga	132579	-	channel	-	-
13893	KCNB3	NM_002252.3	920	ctgtctgtcgtatgaactatgc	132596	-	see also 1448 line	-	-
13894	KCNB1	NM_014379.2	672	cgcgatctctgcacactaac	132613	-	channel	-	-
13895	KGTD10	NM_031954.2	276	ggagaaacatttgcgatactac	132648	-	channel	-	-
13896	KGTD12	NM_138444.2	1034	gcacacacattcgcactaac	132668	-	channel	-	-
13897	KGTD13	NM_178863.2	458	cgatctcactttgcgactaac	132675	-	see also 10225 line	-	-
13898	KGTD14	NM_023930.2	317	agactcattctgaactcaatcag	132675	-	channel	-	-
13899	KGTD15	NM_024078.1	483	agagataaccctctcttaattgc	132687	-	channel	-	-
13900	KGTD3	NM_016121.2	212	ctctcagagagcgcctctatttgc	132691	-	channel	-	-
13901	KGTD6	NM_153331.2	763	tatpactcggagctctcttaagt	132751	-	see also 9886 line	-	-
13902	KEAP1	NM_012289.2	1591	gagagacacatgcgacatgata	132814	-	transcription, regulat or	protein binding	-
13903	KGA0469	NM_014851.1	1236	tcctcttgagatgatacaactcaagc	132819	-	-	-	-
13904	KGA0711	NM_014867.1	2450	tgcctctgcgagctctatctaac	132830	-	-	protein binding	-
13905	KGA0795	NM_025010.1	758	tgtgcgtgtgcgcacaaatgc	132835	-	-	-	-
13906	KAA1369	NM_033495.1	245	cagagacacacacactctttacc	132842	-	see also 9428 line	-	-
13907	KAA1354	NM_018847.1	616	gttatattcaagctctttatca	132880	-	-	protein binding	-
13908	KAA1900	NM_052904.1	1886	cgcactcttctgcacctataca	132910	-	-	-	-
13909	KIP2	NM_006383.1	91	agactcgtcttcgactctatga	132922	-	-	protein binding	-
13910	KLHL6	NM_130446.1	119	acagcgcggagctctcttaatt	132929	-	-	-	-
13911	KLHL8	NM_020803.3	809	atgacatgtgcgacatgataac	132979	-	-	-	-
13912	KNTC1	NM_014708.2	4171	tgtcgtctgtgatactatgacc	133157	-	cell cycle	protein binding	-
13913	KPNA1	NM_002264.1	1113	aggagactatgttcgagctatct	133275	-	see also 1450 line	-	-
13914	LCP2	NM_005565.2	391	gttcgcgattcattgaattgaag	133296	-	signal transduction	USF43/USF44 complex	-
13915	LGALS3B P	NM_005567.2	538	gttgtctgcgacaaatgaacc	133315	-	kinase related	-	-
13916	LIMD1	NM_014240.1	238	ggagctcagagcctctgaatgc	133325	-	receptor activity, signal transduction	-	-
13917	LIN7A	NM_004864.1	376	atctgacgaagcactctgttaa	133351	-	signal transduction	-	-
						-	transcription regulat	-	-

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13918	LMNA	NM_005572.2	1620	aagccgcagcagctgagctgctgc	133363	-	-	mandibuloacral dysplasia(下顎顔面先端形成不全症), atherosclerosis(粥状硬化症), cardiomyopathy(アルコーン性心筋症), limb girdle muscular dystrophy(肢帯型筋ジストロフィー), lipodystrophy(リポジストロフィー), progeria(早老症), Emery-Dreifuss muscular dystrophy(エメリ・ドレフュス型筋ジストロフィー), Charcot-Marie-Tooth disease(シャルコー・マリー・トゥース病), dilated cardiomyopathy with conduction defects(拡張性伝導路に伴う拡張型
13919	LOC9798	NM_138392.1	363	gaattgctcactctctctg	133370	-	-	-
13920	LRP6	NM_002336.1	3472	cgattgcttaacctctctg	133370	-	channel	-
13921	LRPAP1	NM_002337.1	532	cgattgcttaacctctctg	133370	-	see also 1499 line	-
13922	LTBP2	NM_000428.1	3329	ctgattgcttaacctctctg	133558	-	receptor activity	Alzheimer disease(アルツハイマー病)
13923	LTBP4	NM_003573.1	3163	ctgattgcttaacctctctg	133570	-	see also 333 line	-
13924	LY64	NM_005582.1	1422	tgcacttaacctctctctg	133559	-	receptor activity	-
13925	MADH2	NM_005901.2	1456	aagcctctctatgcttaactaga	133640	-	receptor	-
13926	MADH6	NM_005585.2	1813	cgcttcgattctcactgctta	133708	-	receptor signaling	-
13927	MADH7	NM_005904.1	889	tgcctcctctcgcgaactcgaact	133719	-	kinase related, transcription regulator or	-
13928	MAL11	NM_006785.2	1866	gagtcactcctcctcctcctcctc	133728	-	see also 4119 line	-
13929	MAP3K7IP	NM_006116.1	216	gggtcttcctcagcgcctatgctg	133779	-	see also 4779 line	-
13930	MEN1	NM_000244.2	469	aggtctcctgctcctatggaac	133811	-	kinase related	-
13931	MGC10435	NM_052875.2	750	caagcctctcctcctcctcctcctc	133824	-	transcription regulator	bronchial Adenomas/Carcinoids(気管支腺腫/カルチノイド), lipomatous tumors(脂肪腫性腫瘍), angiofibroma(血管線腫), carcoid tumor of lung(肺カルチノイド), hyperparathyroidism(副甲状腺機能亢進症), lipoma(脂肪腫), multiple endocrine neoplasia(多発性内分泌腺腫), pancreatic cancer(膵臓癌), parathyroid adenoma(副甲状腺腺腫)
13932	MGC23106	NM_152735.2	1617	ccctccacaggcactctcgaag	133837	-	transcription regulator	-
13933	MGEA6	NM_005930.1	2434	atgcacagggccactctcgaag	133860	-	or	-
13934	MICB	NM_005931.2	486	tgcctcagggccactctcgaag	133867	-	stem cell factor receptor binding	-
13935	MID1	NM_000381.1	284	ggcctcagggccactctcgaag	133889	-	-	-
13936	MIPZ	NM_003923.1	2287	ggcctcagggccactctcgaag	133896	-	see also 303 line	-
13937	MPP2	NM_005974.2	1809	cgaggcctcagggccactctcga	133953	-	kinase related, signal transduction	-
13938	MPP6	NM_016447.2	1375	tgcctcagggccactctcgaag	134113	-	guanylate kinase	-
					134141	-	-	-

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13939	MPZL1	NM_003953.3	938	atgcggatctccgaagaatgaa	134158	-	signal transduction	-
13940	MTFN	NM_145808.1	356	caaatcttgcagcctgaactc	134160	-	kinase related	-
13941	NMRAT1	NM_022781.2	257	aggaagatgcacgtgtccaaag	134162	-	protein binding	-
13942	NHPA1	NM_000279.1	1158	aggctcagacacgaagctatttc	134198	-	signal transduction	medullary cystic kidney disease(遺伝性萎縮性腎臓病), nephronophthisis(ネフロン病), Senior-Loken syndrome(Senior-Loken症候群)
13943	NHPA2	NM_015102.2	2223	ggatctccgagctctcttgagctt	134204	-	see also 6242 line	-
13944	NUDT5	NM_011142.2	394	ggatctccgagctctcttgagctt	134204	-	phosphatase	-
13945	OGLT	NM_003808.3	449	ctgcagcagctctctcttgagctt	134206	-	see also 2417 line	-
13946	OPI106	NM_014965.1	1075	ctgcagcagctctctcttgagctt	134206	-	-	-
13947	OPI5	NM_007280.1	481	ggatctccgagctctcttgagctt	134206	-	protein binding	-
13948	OSTF1	NM_012383.3	736	atgcagctccgagctctcttgagctt	134478	-	see also 5304 line	-
13949	P29	NM_015484.1	604	ggatctccgagctctcttgagctt	134492	-	-	-
13950	PDRX	NM_003477.1	194	tcggcgttgcctctcttgagctt	134505	-	see also 2351 line	-
13951	PEA15	NM_003768.2	406	cgctctcagctctctctcttgagctt	134551	-	molecular function	-
13952	PEX12	NM_000286.1	1401	ctgtaacactgagctcttgagctt	134576	-	see also 250 line	-
13953	PFDN4	NM_002623.2	77	ttgcacggagatacaaatagagctt	134586	-	tubulin-specific chaperone	-
13954	PGLYRPL1	NM_052891.1	714	caaacctctgctcgcgaacataca	134601	-	receptor activity	-
13955	PGLYRPL2	NM_052891.1	714	caaacctctgctcgcgaacataca	134601	-	receptor activity	-
13956	PGR1	NM_002393.1	758	atgcctctccagcgaatctagctt	134618	-	receptor activity	-
13957	PGRP-L	NM_052890.2	149	ttgactctctcagctctcttgagctt	134626	-	receptor activity	-
13958	PHC2	NM_004427.2	1153	tgagacagctctcgaacataca	134649	-	see also 2959 line	-
13959	PHIP	NM_017934.4	3803	tgatctctccagcgaatctagctt	134762	-	signal transduction	-
13959	PI3	NM_002638.2	139	acggagctctgcttgagctt	134821	-	serine protease inhibitor	-
13960	PMPCA	NM_015160.1	90	gcctcagcagctctgagctt	134827	-	-	-
13961	PNRG1	NM_006813.1	726	ttgcagcagcgaacataca	134860	-	protein binding	-
13962	PRZ2	NM_003891.1	122	agcgtctcagcgaacataca	134867	-	see also 2646 line	-
13963	RAO21	NM_006851.1	369	agcgtctcagcgaacataca	134895	-	see also 4356 line	-
13964	R6B6P6	NM_006910.4	1189	atgcgcagcagcgaacataca	134943	-	see also 4848 line	-
13965	RCB1B1	NM_018191.2	824	ctgcagcagcgaacataca	135130	-	-	-
13966	RCN2	NM_002902.1	860	agagcagcgaacataca	135134	-	protein binding	-
13967	RGS19P1	NM_005716.1	729	tcgcagcgaacataca	135138	-	signal transduction	-
13968	RGS20	NM_003702.2	705	cgactctcttcgcgaacataca	135150	-	signal transduction	-
13969	RHOBTB3	NM_014899.1	397	atgcgcagcgaacataca	135206	-	see also 6083 line	-
13970	RN1	NM_004292.1	395	agcgtctcagcgaacataca	135214	-	-	-
13971	RNFZ	NM_023929.2	1950	ttgtctcagcgaacataca	135236	-	protein binding	-

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13972	RP-C8	NM_138338.1	279	ctgctgctgcttcatcttcc	135267	-	transcription_regulat	-
13973	RP-65	NM_000329.1	1202	tatctacgctccccaatacact	135304	-	see also 276 line	-
13974	RP-GR	NM_000328.1	1770	caagcaactctgactatagagc	135365	-	oligosacaryl	-
13975	RT-KN	NM_033048.1	1211	aggaaagacgcctgcttacttt	135383	-	signal transduction	-
13976	RT-N4	NM_007008.1	552	caagcgcctctctctgcttgctg	135398	-	apoptosis	-
13977	SAG	NM_008541.2	716	gaactccgtgctgcttactgacac	135408	-	phosphatase,	-
13978	SARCOSIN	NM_008063.1	449	ctctctgactctctctgactgtag	135520	-	signal transduction	-
13979	SBB26	NM_018846.2	2001	aggcaactctctgactatataa	135615	-	see also 7801 line	Ouchi disease(小口病)
13980	SCAP1	NM_003782.2	618	aggatagagcgcactctgactttt	135633	-	kinase, related,	-
13981	SEC23IP	NM_007190.2	1020	aggcgcctacagcttttaactctt	135661	-	signal transduction	-
13982	SENABA	NM_020796.1	1112	tggaaactcttgggcttgactttc	135738	-	see also 7972 line	-
13983	SENIP2	NM_021627.1	666	ctctgctccatgcgaaggaatcc	135797	-	see also 8154 line	-
13984	SERPINA4	NM_006215.2	1209	caactctgcctgatacaactctct	135858	-	serpin	-
13985	SERPINA7	NM_000354.2	588	caagcaacaaactcggctgtgttgg	135864	-	transporter	hyperthyroxinemia(高サイロキシン血症)
13986	SERPINB1	NM_005024.1	1066	ggagctggagctagatctacgact	135912	-	serpin	-
13987	SERPINB6	NM_004568.3	228	caagctggccacagacttactttt	135918	-	serpin	-
13988	SERPINB8	NM_002840.3	217	aggcaactcaagaagaactgttc	135925	-	serpin	-
13989	SERPINB9	NM_004155.3	525	tgcgcggtgactcaactgtgttc	135949	-	serpin	-
13990	SGTA	NM_003021.3	840	gaacatgcttgcgaactcaatga	135969	-	protein binding	-
13991	SHANK2	NM_012308.1	40	atctatagcgcctacactaatgg	135973	-	-	-
13992	SLC12A9	NM_020246.2	2802	tggcgtctactgagactctaacac	136035	-	-	-
13993	SLC9A3R2	NM_004785.1	576	tgaactcaactctgactatgacac	136036	-	-	-
13994	SLIT1	NM_003061.1	4072	caagcggcgcgcacatctctgtgg	136071	-	-	-
13995	SLIT2	NM_004787.1	2482	atctcaatgaagcgcctatcagcgc	136185	-	see also 3302 line	-
13996	SLIT3	NM_003062.1	1179	ccggaggcctctctgcaaatdgg	136211	-	gpor,	-
13997	SMO	NM_005031.3	1732	ccggcgcctctctgctctgcaagg	136262	-	receptor activity,	skin cancer(皮膚癌)
13998	SNCAIP	NM_005460.1	322	aagcgcgttctgcacactgaacaa	136267	-	signal transduction	Parkinson disease(パーキンソン病)
13999	SNX6	NM_021249.2	1156	atgtctctacagcggaaactcttc	136327	-	receptor activity	-
14000	SOC55	NM_014011.3	597	aggcgcctacggcctgaactctgt	136355	-	kinase, related,	-
14001	SORCS2	NM_020777.1	1293	aagctgtgcctcttataaactaac	136411	-	receptor activity,	-
14002	SPEC1	NM_020239.2	429	cggatgaccgacacatgttgg	136427	-	signal transduction	-
14003	SPEC2	NM_020240.1	63	accgcatgcttaccgaagatatac	136434	-	signal transduction	-
14004	SP-OP	NM_003563.2	1198	gtgagcaagcctcgaagaacttgc	136451	-	-	-
14005	STIM1	NM_003156.2	2526	agaagatgatactgctctatgag	136475	-	kinase, related,	-
14006	STIM2	NM_020860.1	2441	agggaattgcctcttaactgttgc	136517	-	see also 2129 line	protein binding

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[illegible]

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14040	CASO1	NM_001231.2	1184	agaaatgcaatgtaactg	137457	-	-	calcium ion storage	-
14041	CASO2	NM_001232.1	201	agagacggatgcaactcttc	137463	-	-	calcium ion storage	ventricular tachycardia(心室頻拍症)
14042	CLGN	NM_004366.1	1227	ctgcgagatcgaactatc	137517	-	-	see also 2925 line	-
14043	FLJ20793	NM_019022.3	171	ctgcgcgaactggtgactg	137538	-	-	see also 7663 line	-
14044	AGPAT2	NM_006412.2	263	tgcgcgcgaactcgaactctt	137558	-	-	lysophosphatide acyltransferase	Berardinelli-Seip congenital lipodystrophy(リポシストロフィー)
14045	AIF1	NM_001623.3	237	atgagtttgtaactaatgaaa	137588	-	-	cell cycle	-
14046	AKAP13	NM_006738.4	5754	ctgcgcgaactctattatgaaa	137704	-	-	kinase related, receptor activity	-
14047	ANKRD5	NM_022096.4	1737	tgtgtgcgcgcactattatcctg	137817	-	-	see also 8268 line	Alzheimer disease(アルツハイマー病)
14048	ANKA1	NM_000700.1	175	caacgagtgcccctactctacc	137855	-	-	signal transduction	-
14049	ANKA10	NM_007193.2	1037	ttgtctcaaggcattataagaaa	137890	-	-	receptor binding	-
14050	ANKA13	NM_004306.1	689	caatttcgcgcgcacctttcaagc	137902	-	-	calcium-dependent phospholipid	-
14051	ANKA3	NM_005139.1	948	caatcaataatcaggaactctct	137933	-	-	phospholipase A2 inhibitor	-
14052	ANKA4	NM_001153.2	670	ctgttcgcgcgaacgaactacc	137941	-	-	phospholipase inhibitor	-
14053	ANKA5	NM_001154.2	316	ttgcactccgaatgaactctca	137957	-	-	phospholipase inhibitor	-
14054	ANKA8	NM_001155.2	1307	cgagctcgaagagccactctca	137966	-	-	see also 733 line	-
14055	ANKA7	NM_001156.2	760	atgctctctacgtctctgctgc	138022	-	-	channel	-
14056	ANKA8	NM_001630.1	921	gtgtgcgcgcctcgtatgaagac	138055	-	-	calcium-dependent phospholipid	-
14057	ANKA9	NM_003565.1	1201	cggtcctgctctcgtgtatcaaga	138069	-	-	calcium-dependent phospholipid	-
14058	APBA2BP	NM_031231.2	354	ggagctatccgcgaactttaga	138076	-	-	calcium-dependent phospholipid	-
14059	ASPH	NM_004319.2	296	ttgtgtgtgctgtgtctatg	138085	-	-	see also 2887 line	-
14060	BMP1	NM_001199.1	1615	ttgctctcgcgcgtctcaataac	138154	-	-	see also 779 line	-
14061	BMPER	NM_133468.2	1354	caagcgcgcgtctcgaataagc	138199	-	-	see also 9585 line	-
14062	G14orf10	NM_017817.2	692	gagagcgcgcgtatgactatcac	138231	-	-	see also 7172 line	-
14063	G14orf143	NM_145231.1	461	ttgtcgcgcgcgtcttgactaac	138275	-	-	-	-
14064	G1orf10	NM_016190.1	275	ctgtctcgtgttttaagttgc	138282	-	-	receptor activity	-
14065	G1orf22	NM_025191.2	197	aatgcgcgcgtgactgtatg	138290	-	-	receptor activity	-
14066	G1orf1	NM_012072.2	510	agacacgcgcactctcaactcga	138352	-	-	peptidase receptor	-
14067	G1orf	NM_001733.2	959	agcctcaacacgcgcactca	138362	-	-	trypsin	-
14068	G1S	NM_001734.1	563	acggcttctctgcaactcaat	138372	-	-	trypsin	-
14069	CebA5	NM_011671.62	730	acgtctcgcgcgcgtatgaag	138451	-	-	complement C1S deficiency(補体C1S欠損症)	-
14070	CABP1	NM_004276.3	473	ctgcgcgcgcgcgcgcgcgcgc	138458	-	-	-	-
14071	CABP2	NM_016366.1	692	ctgcgcgcgcgcgcgcgcgcgc	138462	-	-	signal transduction	-
14072	CABP4	NM_145200.1	735	atgagacgcgcgcgcgcgcgcgc	138464	-	-	see also 9779 line	-
14073	CABP5	NM_019865.3	250	agggcgcgcgcgcgcgcgcgcgc	138467	-	-	signal transduction	-
14074	CABP7	NM_132921.1	400	ttgcgcgcgcgcgcgcgcgcgc	138476	-	-	calcium ion binding	-
14075	CAGNA1C	NM_000719.3	2320	gagcgcgcgcgcgcgcgcgcgc	138504	-	-	see also 442 line	-

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14076	CACNA1D	NM_000720.1	4750	caggatcagcttcgaagatgtag	138611	-	see also 445 line
14077	CACNA1E	NM_000721.1	4887	ctcgcgaagcagctatcaatgac	138727	-	see also 457 line
14078	CACNA1F	NM_005183.1	1391	ctcgcgcttcaatcattctac	138755	-	see also 3643 line
14079	CACNA1G	NM_018896.3	591	attctctcgcagctctgaacc	138799	-	see also 7604 line
14080	CACNA1H	NM_021098.1	6449	cgcgcacctgcgaagctaaccttcg	138852	-	low voltage-gated calcium channel
14081	CACNA1I	NM_021098.2	161	tggcgcctattctctctctgc	138855	-	channel, signal transduction
14082	CACNA1S	NM_000089.1	4747	cagctcatctctccaatgagga	138930	-	channel
14083	CALB2	NM_001740.2	386	aggctccagccgcagctttatgac	138939	-	see also 1152 line
14084	CALB3	NM_004057.1	192	aggctccaaacacctgagatgac	138947	-	calcium ion binding
14085	CALM1.5	NM_017422.3	282	gcgcgcgcgcgcgcgaatcagc	138951	-	calcium ion binding
14086	CALN1	NM_031468.1	649	aagactgaagcaccctctctct	138954	-	calcium ion binding
14087	CALU	NM_001219.2	772	tgttgcttgcttgatgaagac	138978	-	see also 795 line
14088	CAPN1	NM_005186.2	2145	ctgcgcgtgccttgcacatt	138995	-	calpain
14089	CAPN11	NM_007058.1	1621	cagcagcttgaggaatgagtg	139015	-	calpain
14090	CAPN2	NM_001748.3	1264	caggactacccgacacattct	139039	-	see also 1157 line
14091	CAPN3	NM_000070.2	2389	gagctcgcctgaatcagctgac	139102	-	muscular dystrophy (筋ジストロフィ, limb girdle muscular dystrophy (肢帯型筋ジストロフィー))
14092	CAPN9	NM_006615.1	845	cgcgcgcgcgtttgctctatta	139125	-	-
14093	CAPN51	NM_001749.1	503	cagcgcacagcaatcattgaaca	139149	-	calpain
14094	CAPN52	NM_032330.1	319	tagcagcttcgcgcacacatta	139164	-	-
14095	CAPS	NM_004058.2	603	cggaaattccagcagctctcagc	139179	-	-
14096	CAPS2	NM_032608.2	1223	agagctatctccagctttgagac	139183	-	-
14097	GBAR1	NM_006077.1	571	tggctcgcgcacatataataa	139222	-	see also 4219 line
14098	OD164.1	NM_020404.1	997	tgcttgcttgatgctatgagc	139241	-	melanoma (メラノーマ)
14099	CD97	NM_001784.2	1381	gagcagcttgcgctctatgac	139255	-	gpor, receptor activity, signal transduction
14100	CDH1	NM_004360.2	1284	acgagctaacgcctgatatcc	139286	-	-
14101	CDH10	NM_006727.2	2385	agcctcgcgcgaactattatcc	139372	-	-
14102	CDH11	NM_001797.2	1007	tggaaattcgcgaactgattgt	139391	-	see also 1173 line
14103	CDH12	NM_004061.2	1833	tagcgcgaacacaaatgattgaac	139452	-	calcium ion binding
14104	CDH13	NM_001257.2	956	atgcctctctgccttatataata	139522	-	calcium ion binding
14105	CDH15	NM_004933.2	742	tgtgcgcgtgtataaacttgacc	139553	-	calcium ion binding
14106	CDH16	NM_004062.2	269	ggagccgcacttgcctatgctgac	139558	-	calcium ion binding
14107	CDH17	NM_004063.2	2010	aagctcaactgcctatgacaggg	139636	-	calcium ion binding
14108	CDH18	NM_004834.2	1028	tagaacgcgccttaataaataagg	139676	-	calcium ion binding
14109	CDH19	NM_021153.2	1117	cagcagccctgcggtttgagcgc	139704	-	calcium ion binding

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14110	CD42	NM_001792.2	1727	atcgcgtccacattctacacaa	139554	-	see also 1160 line
14111	CD420	NM_001891.2	231	tacagcagaccctttttatcgc	139556	-	see also 9045 line
14112	CD422	NM_021248.1	2368	atcgcagaccctttttatcgc	139447	-	-
14113	CD423	NM_022124.2	1608	atcgcagaccctttttatcgc	139556	-	see also 8289 line
14114	CD424	NM_022174.2	349	gagagagagacacattctgtt	140028	-	-
14115	CD426	NM_021810.3	249	gagagagagacacattctgtt	140028	-	-
14116	CD43	NM_001793.2	825	atcgcagaccctttttatcgc	140039	-	-
14117	CD44	NM_001794.2	587	tgtttcttctctccatcctatgc	140727	-	calcium ion binding
14118	CD45	NM_001795.2	1424	gagagctctccgcgcacaaaga	140150	-	breast cancer (乳癌)
14119	CD46	NM_004932.2	1753	tatcgttatccctcttatata	140200	-	calcium ion binding
14120	CD47	NM_004361.2	1218	aaagtcttataataaagcttcc	140281	-	calcium ion binding
14121	CD48	NM_001796.2	371	tttatgcccttttgcacataac	140323	-	see also 1165 line
14122	CD49	NM_016279.2	670	tgcagctgactctctttatcc	140406	-	molecular function
14123	CD5F3	NM_152753.2	1920	ctccgcagagagagctattacc	140487	-	unknown
14124	CD5R1	NM_014246.1	2937	tacacgcctgtatgaaatccag	140512	-	receptor activity
14125	CD5R2	NM_001408.1	4259	tcctcagcagattctctttatcc	140581	-	see also 5554 line
14126	CD5R3	NM_001407.1	3971	catccgaagctacacataacc	140645	-	gpccr
14127	CD5N1	NM_004066.1	275	tcctcagcagattctctttatcc	140645	-	receptor activity, signal transduction
14128	CD5N2	NM_004344.1	182	tcctcagcagattctctttatcc	140695	-	see also 975 line
14129	CD5N3	NM_004365.1	367	tcctcagcagattctctttatcc	140695	-	calcium ion binding
14130	CD5A	NM_001278.2	326	tcctcagcagattctctttatcc	140705	-	calcium ion binding
14131	CD5P	NM_007236.3	384	tcctcagcagattctctttatcc	140716	-	calcium ion binding
14132	CD5TNI	NM_014944.1	968	ctctcgcctctgataaagctgc	140722	-	potassium channel
14133	CD5TNI2	NM_022131.1	2640	actgtctcgcctgataaagctgc	140809	-	regulator
14134	CD5TNI3	NM_014718.1	1752	atgtaaacatcctgtatgatacct	140818	-	signal transduction
14135	CD5TNI4	NM_001833.1	402	ctgaagctctcctgataaagctgc	140837	-	see also 8296 line
14136	CD5TNI5	NM_001834.2	596	catccgcagagagacacagtaga	140844	-	see also 5912 line
14137	CD5N6	NM_006032.2	606	catccgcagagagacacagtaga	140852	-	-
14138	CD5N7	NM_012076.1	1916	atcgcagctctgacccctctctgc	140854	-	transporter
14139	CD5N8	NM_015513.2	1212	atcgcagctctgacccctctctgc	140961	-	-
14140	CD5N9	NM_018058.1	1358	atcgcagctctgacccctctctgc	140961	-	see also 5111 line
14141	CD5N10	NM_001891.1	350	catccgcagagagacacagtaga	140977	-	see also 6446 line
14142	CD5PQ2	NM_004365.2	1312	aaagctgataacatcagatttgc	140998	-	enzyme inhibitor
14143	CD5PQ3	NM_004366.1	640	catccagctctgataaagctgc	141261	-	-
14144	CD5N11	NM_001081.2	2467	aaatcctctcgcagagagtaga	141356	-	-
14145	CD5N12	NM_030788.2	1360	aaatcctctcgcagagagtaga	141606	-	receptor activity
14146	CD5N13	NM_022041.2	193	aaatcctctcgcagagagtaga	141611	-	see also 8247 line
14147	CD5N14	NM_001345.3	1441	ctcagctagagctcgcagatttgc	141638	-	diacylglycerol kinase

Inverslund-Grasbeck syndrome (Inverslund-Grasbeck候症候群), megaloblastic anemia (巨赤芽)

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14148	DGXB	NM_004080.1	2040	acgaacccatccagcaataaga	141713	-	kinase related	-
14149	DKFZs566			tgagatcgaaggaattcctag	141772	-	-	-
14150	DKFZs566	NM_020116.2	740	ttgaccccttttgcgaataatt	141871	-	-	-
14151	DLK1	NM_013366.2	1418	ggagacagagccctgcctataga	141882	-	structural molecule	-
14152	DLK1	NM_030833.3	392	agagatcgcgcgcagcaaacct	141882	-	signal transduction	-
14153	DLK1	NM_058119.2	2459	ctgctcgcctgcctgcctgcctgcct	141909	-	calcium ion binding	-
14154	DLK1	NM_016941.1	1678	agagcgcctgcctgcctgcctgcct	141930	-	signal transduction	-
14155	DLK1	NM_019074.2	2242	agagcgcctgcctgcctgcctgcct	141930	-	signal transduction	-
14156	DMR1	NM_004071.1	1552	ggatagagagccggaataaac	141935	-	integrin binding	-
14157	DMR1	NM_139072.2	1477	ttgacgcgcctgcctgcctgcctgcct	141978	-	see also 9657 line	-
14158	DSG1	NM_004948.2	885	tgatctatagctgcctgcctgcctgcct	142010	-	-	-
14159	DSG2	NM_004949.2	1045	tgatctatagctgcctgcctgcctgcct	142095	-	-	-
14160	DSG3	NM_001941.2	314	ctgttgcctgcctgcctgcctgcctgcct	142157	-	calcium ion binding	-
14161	DSG2	NM_001942.1	3334	agatagatgcctgcctgcctgcctgcct	142345	-	calcium ion binding	-
14162	DSG3	NM_001943.1	1608	ctgttgcctgcctgcctgcctgcctgcct	142392	-	calcium ion binding	-
14163	DSG4	NM_177966.2	3075	tgacacgcctgcctgcctgcctgcctgcct	142654	-	see also 10174 line	-
14164	DUOX1	NM_017434.3	652	tgacacgcctgcctgcctgcctgcctgcct	142654	-	see also 1239 line	-
14165	DUOX2	NM_014080.3	311	gcgcctgcctgcctgcctgcctgcctgcct	142654	-	see also 5857 line	-
14166	EDEM1	NM_014674.1	585	atcatatagaggaactca	142753	-	-	-
14167	EDL3	NM_005711.3	697	agacatccgcgcgcgcgcgcgcgcgcgcgc	142773	-	-	-
14168	EFGBP1	NM_022351.2	663	ttgacacattgcctgcctgcctgcctgcct	142773	-	see also 8342 line	-
14169	EFEMP2	NM_016938.1	1199	gttgcctgcctgcctgcctgcctgcctgcct	142840	-	transmembrane receptor	Alzheimer disease(アルツハイマー病)
14170	EFHC1	NM_018100.1	1678	agcactgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	142905	-	-	-
14171	EGF	NM_001963.2	2374	cgatgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	142972	-	kinase related, signal transduction	-
14172	EGF.6	NM_015307.2	626	atgctgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143012	-	cell cycle	melanoma(メラノーマ)
14173	EGF.7	NM_016215.2	813	gggcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143041	-	-	-
14174	EGF.9	NM_023832.1	717	agacgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143041	-	-	-
14175	ELAI	NM_001971.3	398	gggcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143051	-	trypsin	-
14176	EML2	NM_021155.1	1744	gggcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143075	-	-	-
14177	EMR1	NM_001874.3	1916	gttgcctgcctgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143124	-	see also 1257 line	-
14178	EMR2	NM_013447.2	2803	cgacgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143149	-	GPCR, receptor activity, signal transduction	-
14179	EMR3	NM_023571.2	1450	gttgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143174	-	GPCR, receptor activity	-
14180	EPSP15	NM_001981.1	2699	gggcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143254	-	see also 1263 line	-
14181	EPSP15R	NM_021235.1	79	cgatgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143259	-	-	-
14182	EROL1	NM_014584.1	981	ctgctgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143313	-	-	-
14183	F10	NM_000504.2	244	cgacgcgcgcgcgcgcgcgcgcgcgcgcgcgcgcgc	143339	-	see also 5764 line	Stuart-Power disease(スチュア-パワー病)

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[illegible]

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14223	FLRT3	NM_013281.2	1279	agtttcttgatgacgtattgaag	146234	-	see also 5384 line	-	-
14224	FRAS1	NM_025074.2	4378	atttcacacagcagcattcttcc	146320	-	see also 8843 line	-	-
14225	FSTL1	NM_007095.3	975	agtcacgcgcgcgcgcgcgcgc	146523	-	signal transduction	heparin binding	rheumatoid arthritis (関節リウマチ)
14226	GAS6	NM_009820.1	1624	ttgactctgcgcgcgcgcgcgc	146533	-	-	calcium ion binding	-
14227	GCA	NM_012158.2	239	ttgactctgcgcgcgcgcgcgc	146533	-	-	-	-
14228	GP2	NM_004083.1	2214	ttgagcgcgcgcgcgcgcgcgc	146621	-	see also 323 line	growth factor	-
14229	GRN	NM_002087.1	1631	ttgagcgcgcgcgcgcgcgcgc	146636	-	signal transduction	calcium sensitive	-
14230	GUCA1B	NM_002098.2	99	capcgccacactctttatgcag	146641	-	signal transduction	guanylate cyclase	-
14231	HGF	NM_008001.3	1847	tagtactgattgatttaacatt	146713	-	-	activator	atherosclerosis (粥状硬化症), renal cell carcinoma (腎細胞癌), multiple myeloma (多発性骨髄腫)
14232	HPCAL4	NM_016257.2	648	gaattaccacttcattgtgttc	146730	-	-	trypsin	-
14233	HRC	NM_002152.1	1532	aagagggttcatacaagagatga	146736	-	see also 1383 line	-	-
14234	HUMMLC2	NM_013292.2	174	capaacacttatgattattatga	146741	-	-	-	-
14235	IPO4	NM_024656.2	1578	cttcagggaattctgttaacagg	146768	-	see also 8687 line	-	-
14236	ITIH1	NM_002215.1	1140	agattttctccgcgaattatga	146790	-	-	serine protease inhibitor	-
14237	ITSN1	NM_003024.1	829	aggtccccaacaaagacatttc	146826	-	see also 2024 line	-	-
14238	ITSN2	NM_006271.1	858	agagcaactctcattgtattta	146923	-	see also 4363 line	-	-
14239	JAG1	NM_000214.1	794	cttgccgcgcgcgcgcgcgcgc	147021	-	see also 162 line	-	-
14240	JAG2	NM_002226.3	1485	aggttcgcgcgcgcgcgcgcgc	147117	-	cell cycle, signal transduction	-	-
14241	KCNIP1	NM_014892.2	790	capcacagatggccattactctct	147137	-	channel, signal transduction	-	-
14242	KCNIP2	NM_014591.3	603	gccttgcgcgcgcgcgcgcgc	147157	-	channel, signal transduction	-	-
14243	KIAA0494	NM_014774.1	2439	gaactaaggatgacttgaattg	147203	-	-	-	-
14244	KIAA0676	NM_198866.1	2456	agagatgtgtctgcgcgcgcgc	147220	-	-	-	-
14245	KIAA0980	NM_025176.3	1933	ttgagacaaagtgaattactacc	147238	-	-	-	-
14246	KIP3	NM_054113.1	122	tcgtgcctctgcgcgcgcgcgc	147259	-	-	-	-
14247	LALBA	NM_002286.1	111	capctctctgaacacataatgag	147262	-	signal transduction, apoptosis	-	-
14248	LDLR	NM_000627.2	798	ctctgcgcgcgcgcgcgcgcgc	147272	-	-	lactose synthase	atherosclerosis (粥状硬化症), familial hypercholesterolemia (家族性高コレステロール血症)
14249	LEI1	NM_012318.1	795	ttgctctccactgcgcgcgcgc	147305	-	receptor activity	element binding	-
14250	LOC28609	NM_181723.1	474	cggagagcgcgcgcgcgcgcgc	147318	-	see also 5274 line	-	-
14251	LOC63928	NM_022097.1	613	ttgagacacgcgcgcgcgcgcgc	147359	-	-	calcium ion binding	-
14252	LPA	NM_005571.1	11829	ttgagacacgcgcgcgcgcgcgc	147372	-	-	-	-
14253	LRP1	NM_002332.1	6547	ttgagacacgcgcgcgcgcgcgc	147443	-	see also 1481 line	-	-
14254	LRP2	NM_004525.1	4899	ttgcccgcgcgcgcgcgcgcgc	147673	-	receptor activity	receptor	-

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14290	NID	NM.002508.1	2202	cgagcgaacccctcgtctatgtg	148951	-	-	extracellular matrix structural constituent	-
14291	NIN	NM.016350.3	5609	cgagcggagcgttaaaatcaaa	149000	-	see also 6829 line	-	-
14292	NKOI	NM.033119.3	809	ggagcgcctctgtcaatcggg	149108	-	see also 9369 line	-	-
14293	NOTCH1	NM.017817.2	2423	acacagtttcacgttcgaagtc	149122	-	receptor activity, translation regulator	leukemia(白血病)	-
14294	NOTCH2	NM.024408.2	6041	ctgctgcgaacccggtgaactga	149218	-	see also 6617 line	-	-
14295	NOTCH3	NM.000435.1	3538	ggcgtgctctcgagataaaga	149258	-	see also 344 line	-	-
14296	NOTCH4	NM.004557.2	5905	tgccctcaaccccggtgaatgc	149285	-	see also 3101 line	-	-
14297	NOX5	NM.024505.2	1660	tgagcctgtgactactgttttc	149294	-	channel, apoptosis	-	-
14298	OAZ2	NM.002537.1	407	caagcctctctgttgatgttg	149309	-	see also 1632 line	-	-
14299	PAD1	NM.013358.1	323	ggcacaagccagtaaggaattaa	149319	-	see also 5408 line	-	-
14300	PAD2	NM.007365.1	338	aaggtcacctgtcaactactatga	149336	-	protein-arginine deiminase	-	-
14301	PAD3	NM.016233.1	111	gggaacctgtgtgacathtatgg	149344	-	protein-arginine deiminase	-	-
14302	PAD4	NM.012387.1	1396	agccctctgaagctctatctt	149372	-	protein-arginine deiminase	-	-
14303	PATE	NM.138294.1	256	ggatgttaactcgtgtgttaacc	149390	-	-	-	-
14304	PG-LKG	NM.017675.2	2373	cgaggggttgagccatgaatga	149406	-	-	-	-
14305	PCDH10	NM.02081.1	2885	tcgtctgtgacgaagaaatga	149444	-	see also 7992 line	-	-
14306	PCDH12	NM.016560.2	2127	ctgtctgaactctatctatga	149485	-	see also 8923 line	-	-
14307	PCDH15	NM.033056.2	4091	gagcgcgaacccgctgactctgc	149539	-	calcium ion binding	-	-
14308	PCDH16	NM.003737.1	3022	cgagcgaatgcgcgtctatggg	149717	-	calcium ion binding	-	-
14309	PCDH17	NM.014456.2	2103	aaagtctgcgcgtgaactatctt	149768	-	-	-	-
14310	PCDH18	NM.019035.2	2395	cgaggtggcgaatcaactatcc	149839	-	see also 7669 line	-	-
14311	PCDH20	NM.022843.2	789	ggcgcgaacccctactactatgt	149872	-	see also 8494 line	-	-
14312	PCDH7	NM.002585.2	3940	ggcgcgaacccctactactatgt	149957	-	see also 1669 line	-	-
14313	PCDH9	NM.020403.2	3155	tcgcagcgcgcgtttctttttca	150083	-	-	-	-
14314	PCDH45	NM.018908.2	765	aaatgggcatgtatgtatbaac	150103	-	-	-	-
14315	PCDH81	NM.013340.2	1395	gtcttaatactgcgtctatga	150158	-	-	-	-
14316	PCDH810	NM.018930.2	2299	aagtttttaaaccaagtatttc	150209	-	calcium ion binding	-	-
14317	PCDH811	NM.018931.2	1126	ggcgacaacgcgaagathttttg	150217	-	calcium-dependent cell adhesion molecule	-	-
14318	PCDH812	NM.018932.2	457	tgcttgaagtcgaaggaattt	150221	-	calcium-dependent cell adhesion molecule	melanoma(メラノマ)	-
14319	PCDH813	NM.018933.2	1464	tgaggaacccctactgcgtataaa	150231	-	calcium ion binding	-	-

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14320	PCDH14	NM_018934.2	1039	ttacacatcgtgcatcaaaa	150265	calcium-dependent cell adhesion molecule	-
14321	PCDH15	NM_018935.2	238	caagacagagcatttatataaa	150280	calcium ion binding	-
14322	PCDH16	NM_020957.1	2002	cagccttcggagatagataaa	150327	calcium-dependent cell adhesion molecule	melanoma(45/-+)
14323	PCDH2	NM_018936.2	696	cagctctcgtgcatcaattaac	150349	calcium-dependent cell adhesion molecule	-
14324	PCDH3	NM_018937.2	757	gaagataaccocgttaactcgt	150380	calcium-dependent cell adhesion molecule	-
14325	PCDH4	NM_018938.2	666	tggcacgctgcatgttccaatcc	150402	calcium-dependent cell adhesion molecule	-
14326	PCDH5	NM_015669.2	1042	gaattgtacctatgctctatccc	150443	calcium-dependent cell adhesion molecule	-
14327	PCDH6	NM_018939.2	75	ggattctgaatcattcatt	150456	calcium-dependent cell adhesion molecule	-
14328	PCDH7	NM_018940.2	294	gaagacacccctttccacact	150479	calcium ion binding	-
14329	PCDH8	NM_019120.2	944	ctaaagacattccaataagcttc	150510	calcium ion binding	-
14330	PCDH9	NM_019119.3	767	caatagctccctattgtataa	150520	calcium-dependent cell adhesion molecule	-
14331	PCDG6	NM_013232.2	569	ctctccagattgcagatatt	150592	apoptosis	-
14332	PEF	NM_012392.1	596	ggagacgctcggagctccatcgc	150608	see also 5308 line	-
14333	PH-4	NM_017732.2	865	ctgcccctcgaagatgataaga	150610	-	-
14334	PTPBM2	NM_020845.1	518	ctggtccccaacacgafataag	150626	see also 7992 line	-
14335	PTPBM3	NM_031220.1	2227	cagttgtgcatacacaataag	150648	kinase related	-
14336	PKO1-like	NM_024874.3	3004	gaattgagagctgtattattat	150709	see also 8799 line	-
14337	PKO2L1	NM_016112.2	2549	agagagaggtcccatgattgt	150750	see also 8669 line	-
14338	PKO2L2	NM_014386.1	258	aattccattccagcataactga	150768	channel	-
14339	PKOREJ	NM_006071.1	1462	tgttgaacgcgtgattctata	150835	signal transduction	-
14340	PLA2G10	NM_003561.1	791	gttctgagccgcagagacaaat	150996	calcium-independent cytosolic phospholipase A2	-

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14341	PLA2G1B	NM_000928.2	204	aggaccaccgagtgatgactgg	151003	-	signal transduction	calcium-independent phospholipase A2	-
14342	PLA2G2A	NM_000300.2	375	agggaagcgagcactcatttgg	151011	-	-	calcium-independent cytosolic phospholipase A2	rheumatoid arthritis(関節リウマチ), ApoMin-Induced intestinal neoplasia(生腸腫瘍病)
14343	PLA2G2E	NM_014589.1	418	ggcgaactacaacgcgaatg	151022	-	-	calcium-independent cytosolic phospholipase A2	-
14344	PLA2G2F	NM_022819.1	390	ccgtgtcttcctcaatgtctact	151029	-	-	calcium-independent cytosolic phospholipase A2	-
14345	PLA2G3	NM_015175.1	1181	aaaggcgcaacacatcgaaagg	151032	-	-	calcium-independent cytosolic phospholipase A2	-
14346	PLA2G5	NM_000928.1	375	tcgcacacgtctacaactaca	151038	-	-	calcium-independent cytosolic phospholipase A2	atherosclerosis(粥状硬化症)
14347	PLGD1	NM_006225.1	398	aggacccgcgcgaatcctatga	151040	-	-	signal transducer	Alzheimer disease(アルツハイマー病)
14348	PLGD3	NM_133373.1	1271	gggggggacccctctctatc	151056	-	-	-	-
14349	PLGD4	NM_032726.2	1146	ggcagctcgtcgaaggatctac	151078	-	-	-	-
14350	PLCG1	NM_002660.2	616	tcgaatcgtgagatcgtatct	151112	-	-	receptor signaling protein	-
14351	PLCG2	NM_002661.1	1769	gggagcagctgcgagaagtcg	151167	-	see also 1741 line	-	-
14352	PLCZ1	NM_033123.2	603	atgagtcacgttcgaatgtctct	151225	-	see also 9370 line	-	-
14353	PLEK	NM_002664.1	101	aggagagcgttcgaatcgtgg	151280	-	see also 1744 line	-	-
14354	PLG	NM_000301.1	2135	ctgaccgcgcgcgaatgttctc	151313	-	-	trypsin	-
14355	PLSCR1	NM_021105.1	893	ctgattctgtaccgcgaatgc	151321	-	-	phospholipid scramblase	-
14356	PLSCR2	NM_020359.1	360	ctgtccgcgcaggttggaatct	151324	-	-	phospholipid scramblase	-
14357	PLSCR3	NM_020360.2	877	aggtgaactcgtggatgaatcc	151341	-	-	phospholipid scramblase	-
14358	PLSCR4	NM_020353.1	665	tttttggccgcgaatcgaatga	151353	-	see also 7843 line	-	-
14359	PPEF1	NM_006240.2	1288	ctgtctcccaactcgttcacatgc	151365	-	-	phosphatase	-
14360	PPEF2	NM_006239.2	2409	cgatctccactgaatcgaatga	151476	-	see also 4325 line	-	-
14361	PPHLN1	NM_016488.3	161	atctcacaactgaactatttatt	151495	-	-	-	-

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14362	PPM2C	NM_018444.1	1438	aggaactaaccacgattaaag	151560	phosphatase	pyruvate dehydrogenase (liponamide) phosphatase, regulator
14363	PP2R3A	NM_002718.3	3300	ctatctacagactctacatcagc	151672	phosphatase	protein phosphatase type
14364	PR48	NM_013239.2	1141	acgtcaatcctgcgaagtctgg	151691	phosphatase, cell cycle	protein phosphatase type
14365	PRKCSH	NM_002743.1	376	agcttaataagccctctatctc	151698	kinase related	unknown
14366	PROCC	NM_000312.1	619	gtctccaccgcgaagtgatctc	151704	apoptosis	Smad3/Sp-1 heterodimer
14367	PRON2	NM_144707.1	1429	gtctcctgtctctctctctgg	151713	apoptosis	endopeptidase inhibitor
14368	PROS1	NM_000313.1	261	aaagctctctgcaaatcttact	151720	apoptosis	calcium ion binding
14369	PRRG1	NM_000950.1	617	atctatttggcctcagatctc	151791	apoptosis	calcium ion binding
14370	PVALB	NM_002854.1	283	gaaacactctctctaaagaacc	151794	apoptosis	calcium ion binding
14371	Rab11~						
14371	PIP3	NM_014700.1	737	cagaactcgaacctgtgtctctc	151795	apoptosis	calcium ion binding
14372	PIP4	NM_032932.2	1027	cagcgaattgtctagatgttact	151807	apoptosis	calcium ion binding
14373	RASGRP1	NM_005739.2	1135	tggagagtgacacgactctcaaga	151838	signal transduction	calcium ion binding
14374	RASGRP2	NM_005826.2	1452	acgtctctctgactcaatctatca	151873	signal transduction	calcium ion binding
14375	RASGRP3	NM_015376.1	1657	aaatctcaagatgactcaattatg	151915	signal transduction	calcium ion binding
14376	RCN1	NM_002901.1	499	agaaacccacgacagattctcag	151929	calcium ion binding	calcium ion binding
14377	RCN3	NM_020650.2	567	gtctcagactctccctgattgagc	151932	calcium ion binding	calcium ion binding
14378	RCV1	NM_002903.1	380	atgtctctcgaagattctgctctc		calcium sensitive guanylate cyclase activator	calcium ion binding
14378	REFS1	NM_031922.2	1001	agagatctcgaagatcagatgagc	151940	signal transduction	calcium ion binding
14380	REFS2	NM_004726.1	1015	cagcagaggaactcagatcaatca	152009	see also 9053 line	calcium ion binding
14381	RGN	NM_004663.3	285	agttctctcgtgaggtctcttc	152039	see also 3211 line	calcium ion binding
14382	RHBDL1	NM_003961.1	37	gtgaaagctcggagacacactga	152044	signal transduction	calcium ion binding
14383	RHBDL4	NM_138328.1	401	gaactctcggagacactctctc	152051	see also 9588 line	calcium ion binding
14384	RYR3	NM_001036.2	1964	cagacacacagatgaacagctgt	152102	receptor activity, channel	calcium ion binding
14385	SI00A11	NM_005820.1	330	cagctctgtgactgactgattctc	152363	calcium ion binding	calcium ion binding
14386	SI00A12	NM_005621.1	245	aggtctgtgactgactcaagatg	152370	calcium ion binding	calcium ion binding
14387	SI00A14	NM_020672.1	165	gagacccctcatcagaactctca	152372	calcium ion binding	calcium ion binding
14388	SI00A16	NM_080368.1	303	cagaacactggtgcaactctga	152373	calcium ion binding	calcium ion binding
14389	SI00A5	NM_002962.1	432	cagatcgtgactgactgaaagc	152377	calcium ion binding	calcium ion binding
14390	SI00A8	NM_002964.3	207	cagacgtctgtctcaagaagtgt	152381	calcium ion binding	calcium ion binding

(rheumatoid arthritis (関節リウマチ))

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14391	SC100A9	NM_002965.2	61	topcagctggaacgaacataaga	152384	-	-	translation	-	-	-
14392	SI002	NM_100772.1	480	agaaacacagcagctgctgaaag	152386	-	-	calcium ion binding	-	-	-
14393	SC02	NM_003469.2	1514	agagacagcagcagctgctgaaag	152416	-	-	calcium ion binding	-	-	-
14394	SC01	NM_008988.2	398	ctctcagcagcagcagcagcagc	152428	-	-	calcium ion binding	-	-	-
14395	SC10A	NM_00514.1	3959	ttcagcagcttgcagctgagat	152517	-	see also 4558 line	-	-	-	-
14396	SC11A	NM_008920.2	2594	ctcttcagcttcagcttcagctg	152597	-	channel	voltage-gated sodium channel	-	-	epilepsy(てんかん), myoclonic epilepsy(ミオクローヌスてんかん)
14397	SC02A2	NM_021007.1	6013	acgtctccacactcgtatgatag	152691	-	channel	voltage-gated sodium channel	-	-	Seizures, afibrile(無筋性発作), benign familial seizures(-)
14398	SC03A	NM_008922.2	2326	gagcagcagcaacgataccttag	152708	-	channel	voltage-gated sodium channel	-	-	adynamia episodica hereditaria(遺伝性間断性無力症), hyperkalemic periodic paralysis(高カリウム血性間断性四肢麻痺), paramyotonia congenita(先天性パラミオトニー)
14399	SC04A	NM_000334.3	620	ctctgctgacgacacacacaccc	152758	-	channel	voltage-gated sodium channel	-	-	力症, hyperkalemic periodic paralysis(高カリウム血性間断性四肢麻痺), paramyotonia congenita(先天性パラミオトニー)
14400	SC09A	NM_002977.1	4187	atctgcagctgctgctgctgctg	152867	-	channel	-	-	-	-
14401	SC01E1	NM_173050.1	923	ctctcaacacactcaactatgag	152867	-	see also 10047 line	-	-	-	-
14402	SC01E2	NM_020974.1	2000	ttccagcagctgacacactatgag	152930	-	see also 8059 line	-	-	-	-
14403	SEP1	NM_020451.1	297	cttcagcagcagctgctgacacac	152955	-	-	rigid spine muscular dystrophy(骨格硬直筋失調シンドローム)	-	-	-
14404	SL025A12	NM_003705.2	701	ttcttcgaataataataataacac	152980	-	see also 2527 line	selenium binding	-	-	-
14405	SL025A13	NM_014251.1	256	ttcttcagcagcagctgacacac	153030	-	see also 5556 line	-	-	-	-
14406	SMO01	NM_021372.2	607	gttcagcagcagcagcagcagcagc	153075	-	see also 8301 line	-	-	-	-
14407	SMO02	NM_02138.1	876	agtttcagcagcagcagcagcagc	153103	-	-	-	-	-	-
14408	SPAR01	NM_004684.2	1768	ctctcagcagctgctgctgctgctg	153141	-	-	-	-	-	-
14409	SPO0K3	NM_018950.1	661	cgatagaagccagcagcagcagcagc	153170	-	see also 6979 line	-	-	-	-
14410	SRI	NM_003130.2	274	tttcagcagcagcagcagcagcagc	153194	-	-	receptor binding	-	-	multidrug resistance complex(多剤耐性)
14411	SSR1	NM_003144.2	602	tttcagcagcagcagcagcagcagc	153221	-	see also 2125 line	-	-	-	-
14412	SSR4	NM_008280.1	345	cagcagcagcagcagcagcagcagc	153240	-	-	calcium ion binding	-	-	-
14413	STAB1	NM_015136.1	7108	tgatgagcagcagcagcagcagcagc	153306	-	-	-	-	-	-
14414	STAB2	NM_015964.8	440	ccgctgagcagcagcagcagcagcagc	153314	-	-	-	-	-	-
14415	SWAP70	NM_015055.1	1686	tttcagcagcagcagcagcagcagc	153511	-	see also 6714 line	-	-	-	-
14416	SYN	NM_003179.1	446	tttcagcagcagcagcagcagcagc	153523	-	-	transporter	-	-	renal cell carcinoma(腎臓癌)
14417	TGM1	NM_000359.1	395	ccgagagagcagcagcagcagcagc	153525	-	-	AP-1(jun-D/c-fos heterodimer)	-	-	ichthyosiform erythroderma(鱗屑状紅皮症), ichthyosis congenita(先天性魚鱗病)
14418	TGM2	NM_004619.2	985	ccgctccttcagcagcagcagcagc	153580	-	-	protein-glutamine gamma-glutamytransferase	-	-	Alzheimer disease(アルツハイマー病), Parkinson disease(パーキンソン病)
14419	TGM3	NM_003245.2	1695	aaagcttcagcagcagcagcagcagc	153596	-	see also 2187 line	-	-	-	-
14420	TGM4	NM_003241.1	2015	tgagcagcagcagcagcagcagcagc	153647	-	-	protein-glutamine gamma-glutamytransferase	-	-	prostate cancer(前立腺癌)
14421	TGM5	NM_004245.1	1622	aaagcttcagcagcagcagcagcagc	153655	-	see also 2849 line	-	-	-	-

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14422	TGM7	NM_052955.1	483	gaatatacatcagagattatg	153680	protein-glutamine gamma-transferrin receptor	
14423	THBS1	NM_003361.2	489	ggatttcaggagacacacac	153705	receptor activity	
14424	THBS1	NM_003361.2	1764	aggagctgccttgatgagac	153728	see also 2188 line	
14425	THBS2	NM_003247.2	3562	aggatcacacgctctatagatg	153790	structural molecule	colorectal cancer (大腸癌), lung cancer (肺癌), colorectal cancers (結腸直腸癌)
14426	THBS3	NM_007112.3	181	ctggagacatctcctctatctc	153798	structural molecule	
14427	THBS4	NM_003246.3	1727	cgcttccgcaggagagaaagc	153800	structural molecule	
14428	TK1	NM_001064.1	1373	tgaaatcagcggccatcaaaag	153895	see also 652 line	
14429	TK1L1	NM_017253.1	890	atgtgacacacagctactctact	153905	transketolase	
14430	TK1L2	NM_017254.3	3303	gagctgtgcgcagcttgaagac	154004	see also 5339 line	
14431	TMG3	NM_024082.2	613	cgagcttcagatgccatgtatg	154080	calcium ion binding	
14432	TNNK1	NM_003280.1	479	atgactcttgagctctatgag	154087	see also 2219 line	
14433	TNNK2	NM_003278.2	457	gaagctgagatctctgataaaga	154089	calcium ion binding	thyroid cancer (甲状腺癌), thyroid hormone organification defect IIA (甲状腺ホルモンヨード有機化障害), iodide organification defect (ヨード有機化障害)
14434	TPO	NM_000547.3	421	caagctacacagagatgcttaic	154071		
14435	TRPA1	NM_007332.1	2124	ctccgagcatattatcatgaatt	154158	see also 5080 line	
14436	TSC	NM_017899.1	283	gaagcagctccatcagagatttaa	154217		
14437	UCO1	NM_017549.1	825	agagatgctgcagacaaatcaaa	154234	see also 7030 line	
14438	UMOD	NM_003361.1	1010	baagcagagactctcaatcgaat	154243		
14439	USP13	NM_003940.1	2336	caagctacacagacacagataaa	154315	calcium ion binding	
14440	USP32	NM_032562.2	839	tggattccacatctatctggcc	154348	ubiquitin-specific protease	
14441	ACE	NM_00765.2	2342	atggccacgctccggaatctga	154420	see also 488 line	
14442	ACE2	NM_021804.1	2219	atggccacgctccggaatctga	154534	see also 8170 line	
14443	ADAM12	NM_003474.2	2235	ctgctcgaatgcgaagtgcnaa	154651	zinc binding	
14444	ADAM15	NM_003815.2	1266	tggctgtcttctcgggaatctg	154677		
14445	ADAM17	NM_003183.3	276	tgtctctcagatccagatctct	154687		
14446	ADAM19	NM_023038.2	763	gaatctgcgaactctattgtataa	154766		osteoarthritis (変形性関節症)
14447	ADAM20	NM_003814.3	816	tgtctgttgataatcttgatgat	154802		
14448	ADAM21	NM_003813.2	388	ttgagcttcttcagatgattataa	154852	zinc binding	
14449	ADAM28	NM_014265.1	1025	caagcgaatctctcttgatgttg	154937	zinc binding	
14450	ADAM30	NM_021794.2	882	ttgttgttgatgagataactaa	154958	zinc binding	
14451	ADAM33	NM_025220.2	1569	ctgtcccccagagcttgaactaac	154997	zinc binding	
14452	ADAM8	NM_001109.1	1816	cgagctacagacgcttcaagatc	155070	see also 8882 line	
14453	ADAM9	NM_003816.1	1055	acgcagcaggagataatctatt	155100	kinase-related	
14454	ADAMDEC1	NM_014479.2	634	aagcccaactcgaactctctaga	155153	see also 5700 line	
14455	ADAMTS1	NM_006988.2	2339	tgtttgtatgactatcattgaact	155213	see also 4880 line	
14456	ADAMTS1	NM_030957.1	1242	agaagagctgtgtcaacatga	155245	zinc binding	

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14457	ADAMTS1	NM_030955.1	489	ctggtctcaatccgaatgaatc	155259	-	-	-	zinc binding	-	Schulman-Uppshaw syndrome (Schulman-Uppshaw 症候群、thrombotic thrombocytopenic purpura (血栓性血小板減少性紫癜病))
14458	ADAMTS1	NM_138025.1	2136	tgcgaagacagagaaatctca	155338	-	-	-	signal transduction	-	-
14459	ADAMTS1	NM_138055.1	292	ctctcaactctctctctctctg	155356	-	-	-	-	-	-
14460	ADAMTS1	NM_138055.1	377	tgatatactctgcaatctctg	155375	-	-	-	-	-	-
14461	ADAMTS1	NM_138058.1	2467	aaatccgacacatgctctctg	155469	-	-	-	-	-	-
14462	ADAMTS1	NM_138058.1	2394	aaatctctgctctctctctctg	155557	-	-	-	zinc binding	-	-
14463	ADAMTS4	NM_005059.2	851	ctctgcaactctggaacatctg	155593	-	-	-	see also 3577 line	-	-
14464	ADAMTS5	NM_007038.1	1284	tgcgaacatctggaacatctg	155605	-	-	-	see also 4924 line	-	-
14465	ADAMTS6	NM_014272.2	434	aaatgcaactctggaacatctg	155663	-	-	-	zinc binding	-	-
14466	ADAMTS8	NM_007037.2	1453	ctctggaacatctggaacatctg	155732	-	-	-	zinc binding	-	-
14467	ADAMTS9	NM_020249.2	242	aaagaacgaggaatctcaact	155755	-	-	-	-	-	-
14468	ADH1A	NM_000667.2	1172	aaatctctctctctctctctg	155903	-	-	-	zinc binding	-	-
14469	ADH1C	NM_000669.2	1155	ctgtctctctctctggaagatct	155908	-	-	-	RXR alpha/RXR	-	-
14470	ADH4	NM_000670.2	1146	caagatcatagatctgcaatca	155924	-	-	-	alpha heterodimer	-	-
14471	ADH6	NM_000672.2	593	tcctctctctggaagaaatctg	155955	-	-	-	zinc binding	-	alcoholism (アルコール依存症)
14472	ADH7	NM_000673.2	183	aaattccctcccaaaagactaaa	155989	-	-	-	transcription regulator	-	-
14473	ADDA	NM_020661.1	213	tgttatctctctgcaatgaagac	155991	-	-	-	zinc binding	-	-
14474	ANPEP	NM_001150.1	321	aaataaagctggaactctgacc	156005	-	-	-	receptor activity	-	-
14475	APOBEC3	NM_021822.1	401	atgttatctctggaactctgacc	156035	-	-	-	-	-	-
14476	ARTS-1	NM_016442.2	1023	ctctctctctctctctctctg	156072	-	-	-	see also 6859 line	-	-
14477	BSPRY	NM_017688.1	952	tgcattctctctctctctctctg	156170	-	-	-	-	-	-
14478	CAL1	NM_001738.1	766	tgttatctctctgcaatctctg	156170	-	-	-	translation	-	-
14479	CAL10	NM_020178.2	1156	tgttatctctctgcaatctctg	156174	-	-	-	zinc binding	-	-
14480	CAL11	NM_001212.2	787	ctggaacatctctggaacatctg	156188	-	-	-	zinc binding	-	-
14481	CAL12	NM_001215.2	750	ctggaacatctctggaacatctg	156178	-	-	-	zinc binding	-	-
14482	CAL14	NM_012113.1	1148	aaatggaatctctggaacatctg	156187	-	-	-	zinc binding	-	-
14483	CA2	NM_000067.1	77	ctggaatctctggaacatctg	156189	-	-	-	osteopetrosis (大理石骨病)、osteopetrosis with renal tubular acidosis (腎尿細管性大理石骨病)ともいう大理石骨病	-	-
14484	CA3	NM_005181.2	873	aaatctctctggaacatctg	156208	-	-	-	zinc binding	-	-
14485	CA4	NM_000717.2	172	tgcgaacatctctggaacatctg	156231	-	-	-	zinc binding	-	-
14486	CA5A	NM_001739.1	873	tgcgaacatctctggaacatctg	156234	-	-	-	zinc binding	-	-
14487	CA5B	NM_007220.2	206	caactctctctggaacatctg	156241	-	-	-	zinc binding	-	-
14488	CA6	NM_001215.1	235	gaactctctctggaacatctg	156248	-	-	-	see also 5033 line	-	-
14489	CA8	NM_004056.3	628	gaactctctctggaacatctg	156258	-	-	-	zinc binding	-	-
14490	CA9	NM_001216.1	1167	caactctctctggaacatctg	156265	-	-	-	see also 2733 line	-	-
14491	CDAC1	NM_001785.1	356	gaactctctctggaacatctg	156305	-	-	-	renal cell carcinoma (腎細胞癌)	-	-
14492	CGI-63	NM_030911.1	554	gaactctctctggaacatctg	156310	-	-	-	zinc binding	-	-
14493	CGI-63	NM_016011.1	847	gaactctctctggaacatctg	156319	-	-	-	kinase related	-	-
14494	CRP2	NM_001312.2	90	tgcgaacatctctggaacatctg	156364	-	-	-	receptor activity	-	-
14495	CRP2	NM_001312.2	90	tgcgaacatctctggaacatctg	156364	-	-	-	zinc binding	-	-

図46(続き)

[illegible]

图 46 (续)

14613	TRIM45	NM_025188.1	2233	gcgcaccagcagcagctacttagc	160627	-	-
14614	TRIM46	NM_025058.1	135	agcagctctgcgcctcagctacc	160629	-	-
14615	TRIM47	NM_033452.1	1716	ctctacgcgcagcagcagctacc	160653	-	-
14616	TRIM5	NM_033034.1	265	ctctacgcctctctctctctctctc	160655	-	-
14617	TRIM50A	NM_178125.2	1443	cgctctctacctctctctctctctc	160679	-	-
14618	TRIM52	NM_032765.2	646	ggcgacagcagctagcactctctgc	160686	-	-
14619	TRIM6	NM_058166.2	754	aagcgctctacgcagctatctctgc	160689	-	-
14620	TRIM9	NM_015163.3	328	cgagctctgcgcagctatctctctc	160723	-	-
14621	TSBF1	NM_173084.1	1004	ctgagctcttaaccctctctctctc	160784	-	-
14622	WDFY1	NM_020830.2	1197	tgagcgcgcgcgcctctctctctc	160788	-	-
14623	ZADH1	NM_152444.1	652	ctctctgctctctctctctctctc	161153	-	-
14624	ZFBL1	NM_005782.2	873	ctctctctctctctctctctctctc	161173	-	-
14625	ZFYEL1	NM_021260.1	2480	ggcgagcctctctctctctctctc	161173	-	-
14626	ZFYEL6	NM_017433.1	985	ctctctctctctctctctctctctc	161238	-	-
14627	ZFYEL9	NM_020850.3	193	cgagctctctctctctctctctctc	161389	-	see also 5923 line
14628	ZFYEL20	NM_022340.1	829	agcctctctctctctctctctctc	161389	-	see also 9313 line
14629	ZFYEL21	NM_024071.2	490	cgacacatctctctctctctctctc	161421	-	see also 8332 line
14630	ZFYEL26	NM_015346.2	3119	cgacacatctctctctctctctctc	161462	-	-
14631	ZNF185	NM_007150.1	1104	cgatctctctctctctctctctctc	161533	-	zinc binding
14632	ZNF198	NM_003453.2	3680	ggcgagcctctctctctctctctc	161625	-	-
14633	ZNF505	NM_031218.2	503	agcgactctctctctctctctctc	161658	-	-
14634	ZNF505	NM_024758.3	515	agcgactctctctctctctctctc	161662	-	manganese binding
14635	ARG1	NM_000045.2	860	ggcgactctctctctctctctctc	161694	-	manganese binding
14636	ARG2	NM_001172.2	402	ctctctctctctctctctctctctc	161706	-	manganese binding
14637	B3GAT1	NM_018644.3	355	cgagcgcgcgcgcgcgcgcgcgc	161723	-	-
14638	B3GAT2	NM_060742.1	802	cgagcgcgcgcgcgcgcgcgcgc	161738	-	manganese binding
14639	B4GALT6	NM_004775.2	1317	ctctctctctctctctctctctctc	161799	-	transferring
14640	CDIPT	NM_006319.2	719	cgctctctctctctctctctctc	161807	-	glycosyl groups
14641	DCD	NM_052283.1	348	agcgagcctctctctctctctctc	161812	-	phosphoric monoester hydrolase
14642	DKFZP566E144	NM_015523.1	304	ctctctctctctctctctctctctc	161819	-	-
14643	GALNT1	NM_020474.2	1203	gaagctctctctctctctctctctc	161846	-	see also 6447 line
14644	NPEPL1	NM_024663.2	1110	cgagctctctctctctctctctctc	161889	-	see also 7884 line
14645	PDERA	NM_002865.1	996	tgctctctctctctctctctctctc	161899	-	-
14646	PDERR	NM_003719.1	818	tgctctctctctctctctctctctc	161943	-	see also 1685 line
14647	PDERA	NM_002606.1	1188	agcctctctctctctctctctctc	162007	-	signal transduction
14648	POPUT1	NM_015352.1	203	tgagctctctctctctctctctctc	162023	-	manganese binding
14649	POPUT1	NM_015352.1	203	tgagctctctctctctctctctctc	162023	-	transcription, regulation

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14649	PPM1A	NM_021009.2	1163	tactgcacacttttgttaag	162067	phosphatase, kinase related	-
14650	PPM1B	NM_022706.3	1478	ttctctgaagcattatatt	162107	phosphatase	-
14651	PPM1D	NM_003820.2	616	tcctctgcagccgaactaagttg	162119	phosphatase, cell cycle	protein phosphatase type breast cancer(乳癌)
14652	PPM1F	NM_014634.2	1089	caagatcatcgaggagctcttc	162155	phosphatase, apoptosis	-
14653	PPM1G	NM_002707.3	403	tgactatgacccaantgacc	162159	phosphatase, cell cycle	-
14654	PPPIA	NM_002708.2	485	aagagacgcctcaactcaaat	162174	-	protein phosphatase type
14655	PPPIB	NM_002709.1	1028	ttctctgaagcattatatt	162204	-	-
14656	PPP1CC	NM_002710.1	156	tgccgatttgaggaactcaac	162211	phosphatase	protein phosphatase type
14657	PPP2CA	NM_002715.1	1035	atgagactgcgctactactaa	162261	see also 1767 line	-
14658	PPP2OB	NM_004156.1	801	caatgcacccaactactcttctc	162283	-	protein phosphatase type
14659	PPP4C	NM_002720.1	636	cgacaaatcgaccgaagcaaga	162280	-	protein phosphatase type
14660	PPP5C	NM_006247.2	841	tcggagacacccctctatatt	162303	phosphatase, transcription regulator or kinase related	protein phosphatase type 2C
14661	PPP6C	NM_002721.3	959	caagagacgaacccatattct	162332	-	-
14662	ABP1	NM_001091.1	862	ccgaattgctcttatcaccgc	162356	-	huparin binding
14663	AOC2	NM_001158.2	1787	ctgctagcaacagactaagtc	162394	-	-
14664	AOC3	NM_003734.2	772	agagacgaactggtgacactaa	162398	-	electron
14665	ATOX1	NM_004045.2	231	ctgtctctggtctctcaatag	162405	-	copper binding
14666	QCS	NM_005125.1	379	ctgctctatcgaggaaactattg	162408	-	intracellular copper transporter
14667	CP	NM_000096.1	1954	gagcgcgcgtctactggtgata	162493	-	hypocalcemia(hypocalcemia)(低カルシウム血症)
14668	DBH	NM_000781.2	1343	aggagatcgagctggaagag	162520	-	hypocalcemia(hypocalcemia)(低カルシウム血症)
14669	DOT	NM_001822.2	1214	caagatcgacactggtgattg	162536	see also 1722 line	-
14670	FS	NM_000130.2	2633	ggatctgctactcttactggtg	162636	see also 116 line	-
14671	FB	NM_000132.2	7132	ctgactgctactcttactggtg	162915	see also 117 line	-
14672	FLJ12892	NM_022757.3	5892	gtgactgctactggaactaagtc	162962	-	-
14673	HEPH	NM_014798.2	2159	ggagatgagcgaactatattgt	163005	-	-
14674	HYAL4	NM_012268.1	1177	caagctcgatgagactatatta	163061	-	-
14675	LOX	NM_002317.3	806	ctgctgacacccacttactaac	163077	see also 1430 line	-
14676	LOX1	NM_005576.1	1419	ttggtccagaccccaactatgt	163093	-	protein-lysine 6-oxidase
14677	LOX2	NM_002318.1	2403	agttgacgaactggtctcttc	163119	receptor activity	scavenger receptor
14678	LOX4	NM_002321.5	476	ttgagcagctggtctctctg	163143	receptor activity	scavenger receptor

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14679	MASS1	NM_032119.1	1786	atctcgaagccgacactctct	163769	receptor activity, gpcr	-
14680	MOXD1	NM_015529.1	1696	ttctatctcaagatcaccgcg	163769	signal transduction	-
14681	PAM	NM_000193.2	866	carctccactcagatgatctg	163732	see also 6452 line	-
14682	SCQ2	NM_000138.1	694	catctccgcctctctctcactg	163842	see also 595 line	-
14683	SLG1A42	NM_001163.2	1188	atctcgaagccgacactctctg	163842	copper binding	-
14684	SLG15A4	NM_055648.1	1462	atctcgaagccgacactctctg	163895	see also 4865 line	-
14685	SLC35B2	NM_178148.1	994	atctcgaagccgacactctctg	163906	see also 9391 line	-
14686	TRRAP	NM_003496.1	4287	ccctcactctctctctctcgaat	163987	kinase related	-
14687	ITF	NM_002343.1	1019	ctgaagggcgcgctgctgctta	164140	Smad3/Sp-1 heterodimer	-
14688	MF2	NM_005929.3	354	atctcgaagccgacactctctg	164151	melanoma(メラノーマ)	-
14689	MTF	NM_177478.1	215	atctcgaagccgacactctctg	164174	-	-
14690	RSHL1	NM_030785.1	1489	ctctgaagccgacactctctg	164186	-	-
14691	TF	NM_001063.2	1888	atctcgaagccgacactctctg	164230	Nuclear factor 1 O-type-7	-
14692	FECH	NM_000140.1	410	atctcgaagccgacactctctg	164246	see also 126 line	-
14693	ACQ2	NM_001098.1	1522	ttcgcggagccctctctctctg	164286	iron binding	-
14694	ADHFE1	NM_144650.1	534	catgaagccgacactctctctg	164310	-	-
14695	ALOX12	NM_000697.1	1063	atctcgaagccgacactctctg	164341	Nuclear factor NF-kappa-B p50 subunit	-
14696	ALOX12B	NM_001139.1	1946	ctctcgaagccgacactctctg	164369	see also 726 line	-
14697	ALOX15	NM_001140.3	1143	atctcgaagccgacactctctg	164380	lipoygenase	-
14698	ALOX15B	NM_001141.1	580	ttcgcgaagccgacactctctg	164392	apoptosis	-
14699	ALOX5	NM_000698.1	380	catgaagccgacactctctctg	164399	lipoygenase	-
14700	ALOXE3	NM_021628.1	840	ttcgcgaagccgacactctctg	164434	lipoygenase	-
14701	NIFU	NM_014301.1	313	catgaagccgacactctctctg	164454	atherosclerosis(粥状硬化症), arachidonate 5-lipoxygenase(-)	-
14702	PAH	NM_000271.1	1078	ttcgcgaagccgacactctctg	164468	phenylalanine 4-monooxygenase	-
14703	SCD4	NM_024906.1	718	ttcgcgaagccgacactctctg	164486	tyrosine 3-monooxygenase	-
14704	TH	NM_000360.2	804	catgaagccgacactctctctg	164500	schizophrenia(精神分裂病), Segawa syndrome(Sagawa症候群)	-
14705	TPH1	NM_004178.1	367	ctctcgaagccgacactctctg	164511	see also 2805 line	-
14706	TPH2	NM_173553.2	842	atctcgaagccgacactctctg	164552	see also 10062 line	-
14707	AOX1	NM_001159.2	1605	atctcgaagccgacactctctg	164606	xanthine dehydrogenase	-
14708	SUOX	NM_000456.1	1771	ctctcgaagccgacactctctg	164682	see also 302 line	-
14709	XDH	NM_000373.2	2048	ttcgcgaagccgacactctctg	164710	sulfite oxidase	-
14710	APP	NM_001134.1	970	ttcgcgaagccgacactctctg	164775	see also 7895 line	-
14711	ADCY2	NM_020546.1	1402	ttcgcgaagccgacactctctg	164836	see also 7895 line	-

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14712	ADCY3	NM_004036.2	1937	gaagctccaccacattatgaag	164981	-	-	guanylate cyclase	-
14713	ADCY4	NM_139241.2	1318	gaactgagaaacactccactctct	164925	-	-	-	-
14714	ADCY5	NM_183357.1	2266	cagctgacagcagcgtttggtctc	164950	-	-	-	-
14715	ADCY6	NM_015270.2	3361	gaagagagagagcctccatataac	164967	-	see also 6300 line	-	-
14716	ADCY7	NM_001114.1	3223	ccctctccctccgcctcctacacc	164986	-	see also 697 line	-	-
14717	ADCY8	NM_001115.1	3165	ctctctccctccgactctacacc	165013	-	see also 698 line	-	-
14718	ADCY9	NM_001116.1	2727	tgcctccctccgactctctacacc	165067	-	see also 704 line	-	-
14719	ADK	NM_001123.2	958	gaagcagcagcagcagctgacttca	165127	-	see also 712 line	magnesium binding	-
14720	ADPRH	NM_001128.2	1311	gaagcagcagcagcagctgacttca	165151	-	-	magnesium binding	-
14721	ALP1	NM_001631.2	1467	gaactctctgagcctgctgctgagc	165157	-	phosphatase	-	-
14722	ALPL	NM_000479.2	1662	ggctctccagcagcagcagcagcagc	165173	-	phosphatase	childhood hypophosphatasia(小児型低アルカリホスファターゼ血症), hypophosphatasia(低ホスファターゼ血症), phosphoethanolaminuria(エタノールアミン代謝症)	-
14723	B3GALT3	NM_003781.2	1204	atctctgagctggtttgtaattta	165204	-	see also 2586 line	magnesium binding	-
14724	CD51	NM_001263.2	895	atgacttaccactgatttgagaca	165218	-	see also 827 line	-	-
14725	CERK	NM_022766.4	1459	aaatttaccgctcagaagaattc	165273	-	kinase related	-	-
14726	CLDN16	NM_006580.2	505	tgttgaactcgcagctgttgatgatt	165299	-	-	structural molecule	-
14727	COMT	NM_000754.2	922	gttcacacactaccacactgtccc	165318	-	-	-	-
14728	DKF2p761					-	-	-	-
14728	G058	NM_152542.2	532	gttgagctgagcctcagaatttga	165323	-	phosphatase	-	-
14729	ENG2	NM_001975.2	273	taagctcagcagctctctacataca	165343	-	see also 1285 line	-	-
14730	ENTP3	NM_001976.2	870	ttgaagatccagctctctgacttca	165364	-	-	-	-
14731	ENTP01	NM_001776.2	894	cagagctccagcagctctctacttga	165388	-	see also 1159 line	magnesium binding	-
14732	ENTP03	NM_001248.1	1326	aggtatgagcagctctctctctc	165438	-	-	uridine diphosphate	-
14733	ENTP05	NM_001249.1	250	tggcttcagcagcagcagcactatag	165454	-	phosphatase	-	-
14734	ENTP06	NM_001247.1	443	aggtctctccagcagcagcagcttt	165470	-	phosphatase	-	-
14735	FACL2	NM_001995.2	398	acgaagatccgcactactgagca	165487	-	-	magnesium binding	-
14736	FACL3	NM_004457.2	1560	aggtgctccagcagcagcagcagct	165597	-	-	magnesium binding	-
14737	FACL5	NM_016234.2	730	tggctcttaccctactctctctg	165694	-	-	magnesium binding	-
14738	FACL6	NM_015256.1	352	cagctctctaccctactctctctg	165727	-	-	magnesium binding	-
14739	FDF11	NM_004462.2	112	tggccaccagcagcagcagcagcttca	165759	-	see also 3012 line	magnesium binding	-
14740	FMO2	NM_001460.1	1336	cagacgttcagacccaattagt	165819	-	-	magnesium binding	-
14741	GRIN1	NM_000832.4	3151	gaagctcgttgatctactctctcc	165839	-	receptor activity, channel	-	-
14742	GRIN2A	NM_000833.2	4425	aaagatgacacagcagcagctgattt	165915	-	signal transduction	-	-
14743	GRIN2B	NM_000834.2	2738	tggactctccagcagcagcagcttca	165965	-	see also 544 line	-	-
14744	GRIN2C	NM_000835.2	1312	aaagacagcagcagcagcagcagctg	165991	-	see also 546 line	magnesium binding	-

図4.6 (続き)

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14745	GRIN2D	NM_000836.1	1156	gcgcgaagctctcgaatgaact	166003	receptor activity, channel, signal transduction	—
14746	HPCL2	NM_012260.1	1812	ttctctgacccgcctcaatattgt	166007	see also 5241 line	—
14747	HPRT1	NM_000194.1	852	agagatgaccttgactataatg	166008	transferase, transferring glycosyl groups	arthritis (関節炎)
14748	ID1	NM_004508.2	533	acpataatccttgatgactatc	166009	—	—
14749	ID2	NM_033261.2	317	ctgtatgacccacactatataca	166120	—	—
14750	ILKAP	NM_030768.2	834	ggatagatcgaggaactcttgt	166141	see also 8943 line	—
14751	IMPA1	NM_005536.2	793	gttgctctctaatgatgatataca	166161	phosphatase, signal transduction	myo-inositol-4-phosphate
14752	ITGAE	NM_002208.3	2221	gcctcttgaatgtccgtttatgt	166183	receptor activity, signal transduction	monophosphatase
14753	ITGAL	NM_002209.1	2752	ggggggaactcgttgtaattcagcg	166243	receptor activity, signal transduction	magnesium binding
14754	ITGAM	NM_000632.2	656	aagaattccggaattcccttaacc	166252	receptor activity, signal transduction	magnesium binding
14755	ITGAX	NM_000887.3	2328	ccpccgatctccagagatacttc	166312	receptor activity, signal transduction	Smad3/Sp-1 heterodimer
14756	LYSAL1	NM_004901.1	318	ctgtatctataatccgaataaag	166324	see also 3404 line	atherosclerosis (粥状硬化症)
14757	MTFHD2	NM_006636.2	1066	ccggaagctcctgaatcgaag	166373	—	methylenetetrahydrofolate
14758	MTFHS	NM_006441.1	452	ggggggggaaggggactactatga	166379	—	dehydrogenase (NAD+)
14759	PRKL	NM_002626.2	1285	tgagctccgactgaactatcataca	166390	—	magnesium binding
14760	PRKM	NM_002683.3	1705	aatcctcgttggtttatcttttga	166427	—	magnesium binding
14761	PRKP	NM_002627.2	523	caggaaacgcagatcgtatgaag	166444	see also 255 line	—
14762	PGM1	NM_002633.2	455	acggatcgtgctcgttgtatc	166468	see also 1698 line	phosphoglucomutase
14763	PKLR	NM_000298.3	780	caajccgggaagcgcgtgaacttgc	166509	—	pyruvate kinase deficiency (ピルビン酸キナーゼ欠損症), Gaucher disease (ゴッシャー病), hemolytic anemia (溶血性貧血)
14764	PP	NM_021129.2	647	gtgacacttggtttagaagattataa	166543	—	—
14765	PPA2	NM_006903.3	154	cagaattaccgcctctctcttbaa	166549	phosphatase	magnesium binding
14766	PPAT	NM_002703.3	367	gaattctgctgccaactcaaat	166579	transferase, transferring glycosyl groups	—
14767	PPM1E	NM_014906.3	1752	atgtatggcctgtgtgtcttcttc	166639	—	—
14768	PPPS1	NM_002764.2	540	caagccgcgcgtgctccaagtatg	166664	phosphatase	ribose-phosphate pyrophosphokinase
14769	PPRS1L1	NM_175868.2	395	aagagcgcgtgcccaactctctgc	166668	kinase related	PPRS1 superactivity (PPRS1亢進症), arthritis (関節炎)

図 46 (続き)

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						signal transduction	growth factor	resistance to or association with human
14803	CXCL12	NM_000609.3	302	ctcattaccagccaaatgaat	167374	-	chemokine	immunoodeficiency virus(hiv)関連、HIV抵抗性、
14804	CXCL13	NM_006418.1	222	baaacctctctctctcgaatc	167381	-	-	Pautz-Jeghers syndrome(ポット・イエガー症候
14805	CXCL14	NM_004887.3	557	ctctgagagctcccaagagcagc	167387	-	chemokine	群)、melanoma(メラノーマ)
14806	CXCL5	NM_002994.2	256	ctgacacacacagagagcagc	167393	-	chemokine	-
14807	CXCL6	NM_002993.1	219	acgctctctctctctctctctc	167397	-	chemokine	-
14808	CXCL9	NM_002418.1	102	aggaacccacagctctctctctc	167400	-	chemokine	-
14809	IL8	NM_000564.2	281	ctctcccaacacagaaattatg	167419	-	Transcription	-
14810	PPBP	NM_002704.1	242	ctgaactctctctctctctctc	167422	-	growth factor	-
14811	IFNB1	NM_002176.1	66	ggctctcaactctctctctctc	167429	-	Nuclear factor NF- kappa-B p50 subunit	-
14812	IFNW1	NM_002177.1	964	ggaaatctctctctctctctctc	167444	-	interferon- alpha/beta receptor ligand	-
14813	LIF	NM_002309.2	243	atctctctctctctctctctctc	167447	-	oncstatin-M receptor ligand	-
14814	OSM	NM_020530.3	136	agacagctctctctctctctctc	167450	-	transcription translation	CNS Tumours(中枢神経腫瘍)
14815	CTF1	NM_001330.2	135	ttctgcaactctctctctctctc	167455	-	leukemia inhibitory factor receptor ligand	melanoma(メラノーマ)
14816	IL12A	NM_000882.2	676	tgctctctctctctctctctctc	167464	-	interleukin-12 receptor ligand	-
14817	IL12B	NM_002187.2	429	agatgctctctctctctctctctc	167481	-	interleukin-12 receptor ligand	-
14818	IL5	NM_000879.2	420	atgaacacagctctctctctctc	167497	-	translation	diabetes(糖尿病)
14819	CSF2	NM_000759.2	114	caagcctctctctctctctctctc	167500	-	hematopoietic- associated factor 1A complex	myelodysplastic syndrome(骨髄異形成症候群)
14820	EPO	NM_000799.1	666	ctgacactctctctctctctctc	167510	-	steroid hormone receptor	myelodysplastic syndrome(骨髄異形成症候群)
14821	IL11	NM_000641.2	170	ctgagctctctctctctctctctc	167512	-	interleukin-11 receptor ligand	-
14822	IL10	NM_000572.2	232	agatcagctctctctctctctctc	167513	-	interleukin-10 receptor ligand	rheumatoid arthritis(関節リウマチ)、
14823	IL9	NM_000590.1	365	agacacagctctctctctctctc	167522	-	interleukin-9 receptor ligand	atherosclerosis(粥状硬化症)
14824	IL7	NM_000880.2	730	caagctctctctctctctctctc	167527	-	-	-
						-	see also 573 line	-

図4.6 (続き)

14825	IL6	NM_000800.1	420	ttgaattgtagatatactacaga	167541	-	signal transduction	Rel A homodimer	rheumatoid arthritis(関節リウマチ), kaposi sarcoma(カポジ肉腫), non-hodgkin lymphoma(非ホジキンリンパ腫), attherosclerosis(粥状硬化症), breast cancer(乳癌), ovarian cancer(卵巣癌), prostate cancer(前立腺癌), renal cell carcinoma(腎細胞癌), multiple myeloma(多発性骨髄腫), juvenile rheumatoid arthritis(若年性慢性関節リウマチ), Hodgkin's disease(ホジキン病), melanoma(メラノーマ)
14826	IL4	NM_000589.2	438	acagacacagacagatatactacc	167543	-	-	-	-
14827	IL3	NM_000586.3	146	cttgatctactctctcaacaga	167551	-	-	receptor signaling protein	rheumatoid arthritis(関節リウマチ), myelodysplastic syndrome(骨髄異形成症候群)
14828	IL2	NM_000586.2	612	cagcaatctcaagcgaatattctc	167575	-	-	Retinoic acid receptor RXR-alpha	severe combined immunodeficiency due to IL2 deficiency(インターローキン2欠損による免疫不全症)
14829	IFNG	NM_000619.1	236	cagatctagctgagatatactgaact	167583	-	signal transduction	FOS-related antigen 1	rheumatoid arthritis(関節リウマチ)
14830	IFNA6	NM_021002.1	307	agctctctcagacaactctatcac	167592	-	-	-	-
14831	IFNA8	NM_002170.1	405	aggaagtctggagctgatactgctct	167595	-	transcription regulator, or,	-	-
14832	IFNK	NM_020124.1	385	aagcagatgactctgacccaatctc	167602	-	-	-	-
14833	IFNT1	NM_176891.2	498	ctggcccatctgtccagctgagaaa	167611	-	-	-	-
14834	IL15	NM_000855.2	673	gaatctcgaaatccaagtattctca	167623	-	signal transduction	-	-
14835	EDI	NM_001399.3	1061	cttgtctctgcacactatgaacc	167637	-	see also 972 line	-	-
14836	LTA	NM_000595.2	719	cagccctagctactgctctcttctg	167645	-	signal transduction, apoptosis,	-	-
14837	TNF	NM_000594.2	736	ctgctctagagcccatctatcttgg	167656	-	signal transduction	-	-
14838	TNFSF10	NM_003810.2	140	ctgcctgactctctgctgactctca	167660	-	apoptosis, transcription regulator	tumor necrosis factor receptor ligand	arthritis(関節炎)
14839	TNFSF11	NM_003701.2	376	atggatccatagatagatatacaga	167667	-	signal transduction	-	-
14840	TNFSF13	NM_003806.2	1312	gaactctatctccagatgataag	167700	-	see also 2526 line	-	-
14841	TNFSF13B	NM_006573.3	289	gaagcactcaagccttactctcttg	167706	-	signal transduction	tumor necrosis factor receptor ligand	rheumatoid arthritis(関節リウマチ)
14842	TNFSF15	NM_005118.2	541	cagaactcaggagcactctcaatt	167719	-	signal transduction, cell cycle	tumor necrosis factor receptor ligand	rheumatoid arthritis(関節リウマチ), systemic lupus erythematosus(全身性エリテマトーデス)
14843	TNFSF4	NM_003282.2	653	atggcagagaaactgattctattctc	167731	-	signal transduction	tumor necrosis factor receptor ligand	-

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14844	TNFSF5	NM_000074.1	799	acgtctcttgctactcaaatc	167754	-	apoptosis, signal transduction	translation regulator	atherosclerosis(粥状硬化症)、immunodeficiency(免疫不全症)
14845	TNFSF6	NM_000639.1	890	ctggagcagctgctcaactcac	167765	-	apoptosis, signal transduction, kinase related	translation regulator	autoimmune lymphoproliferative syndrome(免疫細胞増殖症候群), systemic lupus erythematosus(全身性エリテマトーデス)
14846	TNFSF8	NM_001244.2	570	atgggaatctgctgctcaaatc	167776	-	signal transduction, apoptosis	tumor necrosis factor receptor ligand	-
14847	TNFSF9	NM_003811.2	421	agctctgagctctactctcttc	167792	-	apoptosis, signal transduction	tumor necrosis factor receptor ligand	-
14848	IL1RN	NM_000577.3	563	aagctcctgctgctcaaatc	167807	-	-	factor	-
14849	IL18	NM_001562.2	400	aggaatactggctctctattgaag	167819	-	apoptosis	interleukin-1 receptor ligand	diabetes(糖尿病), melanoma(メラノーマ)
14850	IL1A	NM_000576.3	1370	atcacgcctcctcaataaagcata	167845	-	apoptosis, cell cycle	interleukin-1 receptor ligand	rheumatoid arthritis(関節リウマチ), Alzheimer disease(アルツハイマー病), osteoarthritis(変形性関節症)
14851	IL1B	NM_000576.2	167	atgagccctcaacagatcaatgc	167867	-	apoptosis, cell cycle	translation regulator	Alzheimer disease(アルツハイマー病), Parkinson disease(パーキンソン病), melanoma(メラノーマ)
14852	IL1F10	NM_032556.4	437	atgcgaatctctctcaatcac	167879	-	cell cycle	-	-
14853	IL1F6	NM_014440.1	122	caatcctctctctctcaatcac	167890	-	-	-	-
14854	IL1F7	NM_014439.3	573	ctgctcctctcgaattctgtagc	167900	-	-	-	-
14855	IL1F8	NM_014438.3	124	catctcccaatctctctctgctat	167909	-	-	-	-
14856	IL1F9	NM_0149819.2	105	aagggcctctatactcaatcagct	167928	-	-	-	-
14857	INHBC	NM_005358.2	585	tggcgtgctgctcctctactacc	167944	-	-	inhibin	-
14858	TGFB1	NM_000660.1	1677	ggccctctgacacacacactatgc	167965	-	apoptosis, cell cycle, signal transduction	Smad3/Sp-1 heterodimer	atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病), Alzheimer disease(アルツハイマー病), diabetes(糖尿病)
14859	TGFB2	NM_003238.1	1092	tggatcgcctctctctcttaga	167989	-	-	AP-1(c-Jun/ATF2 heterodimer)	-
14860	TGFB3	NM_003239.1	899	gaatccaactctgctctagaat	168016	-	signal transduction, cell cycle	transforming growth factor-beta receptor ligand	-
14861	DTR	NM_001945.1	857	aagctgaagtttgctgactgaat	168036	-	receptor activity, signal transduction	receptor	diphtheria toxin sensitivity(ジフテリア毒素過敏症)
14862	EREG	NM_001432.1	342	ctctgctcaagtttccaataaca	168038	-	cell cycle, signal transduction	growth factor	-
14863	ECGF1	NM_001953.2	541	tggctctcaagtttccaataaca	168055	-	signal transduction	thymidine phosphorase	-
14864	TFG	NM_004469.2	658	tggaggaactctctgaattct	168069	-	cell cycle	platelet-derived growth factor receptor ligand	-

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14865	PDGFB	NM_002608.1	1131	tcgacgcgcctcttgatgatct	168099	-	cell cycle	-	Ewing's sarcoma(尤文氏肉腫), skin cancer(皮膚癌), dermatofibrosarcoma protuberans(隆起性皮膚纖維肉腫)
14866	VEGFB	NM_003377.3	146	gctctatgatgatgatgatgaac	168114	-	signal transduction, cell cycle	vascular endothelial growth factor receptor	neuroblastoma(神経母細胞腫), lung squamous cell carcinoma(肺扁平上皮癌), lung cancer(肺癌)
14867	MUC4	NM_004532.2	1514	ggagcaagaggagctatgaatcc	168131	-	-	-	-
14868	KITLG	NM_000899.1	270	cagagatcctctgactatataatg	168198	-	-	-	-
14869	CSF1	NM_000757.3	500	ctctccagatctctctgagagca	168238	-	-	-	-
14870	IL22	NM_020325.3	380	ctgatgatctccagctatgatg	168253	-	see also 584 line	-	-
DKFZp451									
14871	J0118	NM_175852.3	90	gggctgcgaacaatccaatcc	168258	-	-	-	-
14872	AREG	NM_001657.2	491	ctgctatattctgatgatctta	168273	-	-	-	-
14873	ARS	NM_020427.2	127	gtctctctcaggaaccttaacc	168281	-	-	-	-
14874	BMP10	NM_014482.1	615	aagagatgcttgatatactgatg	168292	-	-	-	-
14875	BMP15	NM_005448.1	1068	ctgtgtccctgaatgaatgctc	168335	-	-	-	-
14876	BMP2	NM_001200.1	960	ggagcagagcaacaatgatgatg	168347	-	-	-	-
14877	BMP3	NM_001201.1	1355	ggagcagagcgtccaattgatg	168363	-	see also 780 line	-	amyloidosis(アミロイドーシス)
14878	BMP5	NM_021073.2	996	aaggtctgagatctcagtaaggg	168420	-	-	-	-
14879	BMP6	NM_001718.2	1053	tttttggacaccgtatgatgatg	168455	-	-	-	-
14880	BMP7	NM_001719.1	687	acgttcgcagatcagctttata	168470	-	-	-	-
14881	CXCL16	NM_022059.1	1196	cgatcttcgcagctctttatata	168501	-	-	-	-
14882	FAM3B	NM_038189.2	146	aagacagctttttcttaagttta	168506	-	-	-	-
14883	FAM3C	NM_014868.1	262	atgaagttttagaaactatatt	168519	-	-	-	-
14884	FAM3D	NM_138905.2	524	acgtctcagctccctacttgagc	168540	-	-	-	-
14885	FLT3LG	NM_001459.2	387	tgatctctgaacacagagatgaact	168551	-	signal transduction	-	-
14886	GDF10	NM_004962.2	1633	tggatataatctcagaaatattt	168558	-	signal transduction	-	-
14887	GDF11	NM_005811.2	1063	cagcagctcagcagcagctatg	168569	-	-	-	-
14888	GDF2	NM_016204.1	667	aagcagctctatgatgatctc	168577	-	see also 6723 line	-	-
14889	GDF3	NM_020634.1	1097	aagcagctctatgatgatgatg	168602	-	-	-	-
14890	GDF5	NM_005295.1	976	ctgtctttctcccttaactgatg	168609	-	see also 3700 line	-	-
14891	GDF9	NM_005260.2	1126	aggtaaacacctctgatctgtaa	168666	-	signal transduction	-	-
14892	GPI	NM_000776.2	410	cttcggacagcgttcaaacacc	168676	-	-	-	thrombotic arthritis(関節リウマチ), anemia hemolytic(溶血性貧血)
14893	IL1	NM_004513.3	2126	atggactctctcagcttgatcctc	168721	-	-	-	-
14894	IL17	NM_002190.2	228	aagctctcagatctatacaaac	168759	-	apoptosis	-	-
14895	IL17C	NM_013276.3	437	ctgttcagaggtctctatgagtc	168761	-	signal transduction	-	thrombotic arthritis(関節リウマチ)
14896	IL17F	NM_052687.2	273	cagatcaccctcagagctctaac	168768	-	-	-	-
14897	IL19	NM_013371.2	1410	ggagagctcagctctcttttag	168780	-	-	-	-
14898	IL20	NM_018724.2	339	cagagcccttaacctactctct	168792	-	signal transduction	-	-
14899	IL21	NM_021803.1	284	cagagagcccaactaaatcagc	168804	-	-	-	-

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14900	IL26	NM_018402.1	157	ctctttacgctctctatcaaa	168813	-	cytokine	-
14901	MDK	NM_002391.2	265	tggagcgcactcgaatccaat	168825	-	signal transduction, cell cycle	-
14902	MF	NM_002415.1	367	caacccagcagcagctcactca	168827	-	isomerase	-
14903	NODAL	NM_018055.3	391	tgctctcagctacacataaga	168846	-	-	-
14904	PGLYRP	NM_005091.1	341	tggagagagcagctcgtctatcg	168849	-	peptidoglycan recognition	-
14905	PLAB	NM_004864.1	899	ctctcgtcgtcagctctatgga	168851	-	signal transduction	-
14906	PTN	NM_002825.4	566	ctgagcttgatgtcaagcaaac	168857	-	phosphatase, cell cycle	-
14907	SCGB1A1	NM_003573.3	151	atgacacacctctcaatttga	168861	-	signal transduction	-
14908	SPPI	NM_000582.2	436	tccagcagctctctgattgga	168873	-	steroid binding	-
14909	THPO	NM_000460.2	959	caggtacacagcactcttgatg	168895	-	apoptosis	-
14910	TNFRSF11B	NM_002546.2	1280	gggctctaatgcagcactaaagc	168921	-	receptor activity, apoptosis, signal transduction	-
14911	TNFSF18	NM_005092.2	241	ctgaaactcttcgtgataag	168932	-	apoptosis, signal transduction	-
14912	BDNF	NM_001702.3	510	cagaaacttcgccaataaaga	168937	-	see also 1134 line	-
14913	CEOR1	NM_017424.2	1253	tgcgttaagctgctctactct	168937	-	-	-
14914	DKK1	NM_012242.1	160	gggactccagcagctcttctgg	169005	-	see also 5219 line	-
14915	EDN2	NM_001956.2	522	gggagcctcagctccacactcc	169014	-	kinase, related, signal transduction	-
14916	FGF1	NM_000800.2	504	tggcttgctgctctcaagaaga	169025	-	toxin	-
14917	FGF11	NM_004117.2	739	gggaaacccagctcaggaagacc	169035	-	signal transduction	-
14918	FGF12	NM_004113.3	303	atgcacccagatggtacattga	169037	-	growth factor	-
14919	FGF13	NM_004114.2	993	gtgagctcagcaggttcaaac	169059	-	-	-
14920	FGF14	NM_004115.2	206	aggtgtatgaccaggtctatat	169068	-	see also 2777 line	-
14921	FGF18	NM_003862.1	558	ctgcaactctgctgttcaact	169095	-	see also 2780 line	-
14922	FGF19	NM_005117.2	1000	caggagccacttcagatctgaca	169098	-	signal transduction	-
14923	FGF2	NM_002006.2	777	tggacagcttgatcattataac	169104	-	growth factor	-
14924	FGF20	NM_019851.1	444	caatggagcttgctgattttaga	169112	-	growth factor	-
14925	FGF21	NM_019113.1	256	tgaagcagcaggtattcaaat	169125	-	signal transduction	-
14926	FGF22	NM_020637.1	241	gtgagctctggtcactcaaac	169127	-	growth factor	-
14927	FGF23	NM_020638.2	627	aggagcagatcccccattca	169133	-	growth factor	-
14928	FGF3	NM_005247.2	824	cacgcgcagcttcagatttgg	169138	-	signal transduction, cell cycle	-
14929	FGF4	NM_002007.1	819	agcgtcctagatctctcaatac	169140	-	signal transduction, cell cycle	-

rhumatoid arthritis (関節リウマチ),
atherosclerosis (粥状硬化症), lung cancer (肺癌),
stus amblyopus (内臓不定位)

atherosclerosis (粥状硬化症)

cell carcinoma (頸部扁平上皮細胞癌),
melanoma (メラノーマ), head and neck squamous cell carcinoma (頭頸部扁平上皮細胞癌),
melanoma (メラノーマ), head and neck squamous cell carcinoma (頭頸部扁平上皮細胞癌),
squamous cell cancer (扁平上皮癌)

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14930	FGF5	NM_004464.2	477	hgaatccacagagccatattat	169145	-	see also 3021 line	signal transduction	-	-
14931	FGF6	NM_020996.1	163	caagcaccctccacacacag	169162	-	-	signal transduction	growth factor	-
14932	FGF7	NM_020909.2	518	atagctatatacttttagctg	169170	-	-	signal transduction	growth factor	-
14933	FGF8	NM_008119.2	877	gcctcagctcactctcagcgc	169185	-	-	signal transduction	-	-
14934	FRS3	NM_024816.1	1161	ktctccacatcaatgaaagc	169211	-	-	signal transduction	-	-
14935	GDNF	NM_000514.2	551	tgtcctcaatcactatcatt	169216	-	-	cell cycle	-	-
14936	GAP	NM_020917.3	227	ctcgcgcgtggaactaatag	169229	-	see also 398 line	signal transduction	growth factor	breast cancer(乳癌), prostate cancer(前立腺癌)
14937	IGF1	NM_000618.2	181	caagcttccacacccattatta	169237	-	-	-	-	hepatocellular carcinomas(肝癌), thyroid cancer(甲状腺癌), colorectal cancer(大腸癌), breast cancer(乳癌), growth retardation with sensorineural deafness and mental retardation(感覚神経聴と精神遅滞を伴う成長遅延), lung cancer(肺癌), prostate cancer(前立腺癌), pygmy dwarfism(小人症), colorectal
14938	INHBE	NM_031479.3	720	ctagctcgtcatccttaactct	169245	-	-	-	-	-
14939	LOC14595	NM_138573.1	388	tttagctctcgtatcaacttat	169261	-	-	-	-	-
14940	MIA	NM_006533.1	329	caagcttcaaggaagttactatg	169269	-	-	-	-	-
14941	NDP	NM_000266.1	522	ctcgaatgagcccatctatgag	169274	-	-	signal transduction	growth factor	melanoma(メラノーマ)
14942	NGFB	NM_002506.1	827	ttagctcttttccagatgatgao	169285	-	-	-	-	Guinea disease(二一病), oxidative vitreoretinopathy(渗出性網膜下体網膜症), Norrie disease (pseudoglioma)(偽網膜腫)
14943	NGG1	NM_013962.1	1295	tgaatcaaacgctacatctcca	169338	-	-	kinase related	growth factor	schizophrenia(精神分裂病)
14944	NRG2	NM_004983.1	889	cgagctcgggtctgtgtgtaag	169339	-	-	-	-	-
14945	NTF3	NM_023272.2	527	cttttctcgcagcgttgtaagcca	169376	-	see also 1629 line	signal transduction	-	-
14946	NTF5	NM_001719.3	528	caagctccctccagctactctct	169387	-	-	-	-	-
14947	OGN	NM_014057.2	842	aagctcactatgaattactctc	169428	-	see also 5474 line	growth factor	-	-
14948	PDGFC	NM_016205.1	1235	caagctcacaactctgaactctct	169456	-	cell cycle	-	-	-
14949	PGF	NM_002632.3	601	ctgctctcgcagatgaactctgc	169464	-	-	signal transduction	-	-
14950	PROK1	NM_032414.1	62	ctgcccctcagctctcaactcag	169468	-	-	cell cycle	heparin binding	atherosclerosis(粥状硬化症), arthritis(関節炎)
14951	RABEP1	NM_004703.2	1705	tgttatcttgtagttatgaaag	169508	-	see also 3222 line	-	growth factor	-
14952	SCDGF-B	NM_025208.2	253	gaagcgcctccacaaagcttgc	169537	-	-	-	-	-
14953	SCGF	NM_002975.2	368	gaagatctctcgcagatcttgaag	169560	-	-	-	-	-
14954	TFPI	NM_003225.1	241	gtttctctctctcaatccatgag	169563	-	-	-	-	-
14955	VEGFC	NM_005429.2	1414	tggagcacaacagagatattgag	169583	-	see also 3790 line	translation	-	breast cancer(乳癌), pancreatic cancer(膵臓癌)
14956	VGF	NM_003378.2	707	caagcagctcgaattctcagctc	169583	-	-	-	-	-
14957	ADCYAP1	NM_001117.2	507	aagagcgcgcgaagactatttg	169604	-	-	growth factor	neuropeptide hormone	-

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14958	ASMT	NM_004043.1	468	cgcttcacccagcgtcacatg	169611	-	-	hematopoietic-associated factor 1A complex	-
14959	CORT	NM_001302.1	169	cgccacagacacagcagatgc	169618	-	-	neuropeptide hormone	-
14960	CRH	NM_000756.1	383	cgcttcagagagagctctcc	169620	-	signal transduction	Alzheimer disease(アルツハイマー病)	-
14961	GAL	NM_015973.2	435	atgcacacatcattgattct	169622	-	signal transduction	neuropeptide hormone	-
14962	GALP	NM_003106.1	353	accttttgccaaacagagattg	169626	-	signal transduction	neuropeptide hormone	-
14963	NPY	NM_000905.2	235	cgctcctgcacacacacac	169628	-	receptor activity, signal transduction	Smad3/Sp-1	-
14964	NTS	NM_006183.3	513	aaagagagactctataaagaaa	169634	-	signal transduction	peptide hormone	atherosclerosis(粥状硬化), elevated plasma LDL(血漿リポタンパク質増加), alcoholism(アルコール依存症)
14965	TAC1	NM_003182.1	211	agggcccaatgatctcgaatt	169652	-	see also 2157 line	peptide hormone	alcoholism(アルコール依存症)
14966	PTH	NM_000315.2	129	aaagcatgctaaagtatgatt	169671	-	signal transduction	regulator	hyperparathyroidism(副甲状腺機能亢進症), hypocalcaemia(低カルシウム血症)
14967	PTH1H	NM_002820.2	462	aggggaatcctcaatcaagatta	169684	-	-	VDR/VDR alpha heterodimer	hereditary hypocalcaemia of malignancy(悪性カルシウム過剰血症), non-small-cell lung cancer(非小細胞肺癌)
14968	GNRH1	NM_000825.2	1241	cagaaacccacagctctgaatgc	169689	-	signal transduction	luteinizing hormone-releasing factor	adrenal hyperplasia(副腎皮質過形成), familial idiopathic hypogonadotropic hypogonadism(家族性特発性低ゴナドトロピン性性機能低下症)
14969	TRH	NM_007117.1	321	cgccctcccgatcttctaact	169683	-	signal transduction	thyrotropin-releasing hormone	-
14970	ADM	NM_001124.1	230	atctctcctcgagcttcgaag	169696	-	signal transduction	peptide hormone	-
14971	AGT	NM_000029.1	1189	ctgtgtctcgaagatctatga	169702	-	signal transduction	complex	essential hypertension(本態性高血圧)
14972	APM1	NM_004797.1	376	tggattgagctactcactact	169707	-	-	hormone	atherosclerosis(粥状硬化)
14973	CALGA	NM_001741.1	383	accttccccaacacctgcaattg	169714	-	gpcr	peptide hormone	-
14974	OCK	NM_000729.2	285	ctgacagatgctcatccttaag	169716	-	signal transduction	peptide hormone	Parkinson disease(パーキンソン病), Ewing's sarcoma(ユーンク肉腫), peripheral neuroepithelioma(末梢神経上皮腫)
14975	OGA	NM_000735.2	412	cagctgtccactcagctactgt	169726	-	signal transduction	Thyroid hormone receptor beta-2	-
14976	COPA	NM_004371.2	2133	ggagacacagagatcctcaact	169762	-	see also 2033 line	-	-
14977	FLJ14800	NM_032840.1	1098	cggaaactcggagctcagctg	169816	-	kinase, related	-	-
14978	FSHB	NM_000510.1	102	atgtctttcttcagtcacata	169819	-	receptor activity	glycoprotein hormone	bladder cancer(膀胱癌)
14979	GCG	NM_020654.2	474	agccagagagagcagcagttcc	169832	-	signal transduction	-	-
14980	G42	NM_020565.3	544	ctggagagcttccagctacgcc	169840	-	see also 1328 line	-	-
14981	GIP	NM_004123.1	400	tggcagcagctcagctatggaag	169844	-	signal transduction	peptide hormone	-

14982	GP65	NM_145171.2	107	ctccctgagagcttactcttc	169848	-	-	-	-
14983	GP42	NM_130769.2	280	caatgctacagacacacttc	169850	-	-	-	-
14984	GRTP1	NM_024118.1	507	aaagaagctcagagcttcttc	169859	-	-	-	-
14985	HAMP	NM_021175.1	248	cgctctctcagcagcagaagt	169870	-	hormone	-	arthritis(関節炎)
14986	IAPP	NM_000415.1	303	ttgctctcattctctctacacc	169873	-	apoptosis, signal transduction	-	-
14987	INS	NM_000207.1	173	ctggcgaagcagctctctctbca	169879	-	signal transduction	-	-
14988	INSL4	NM_002195.1	151	ctggcgaagcagctctctctbca	169881	-	signal transduction	-	-
14989	INSL5	NM_005476.3	406	atgctctctcagctcagcttg	169910	-	peptide hormone	-	-
14990	INSL6	NM_007178.2	580	taagattgcatgctctctcatata	169922	-	peptide hormone	-	-
14991	LEP	NM_000230.1	360	gaaacactccgagctctctctca	169932	-	hormone	-	atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病)
14992	LRSAM1	NM_138361.2	1088	ggctccacagcagagctctcaag	169940	-	hormone	-	atherosclerosis(粥状硬化症), diabetes mellitus(糖尿病)
14993	MGC45438	NM_152459.2	911	cgatgagccagctatgctctgt	169954	-	peptide hormone	-	-
14994	NPPA	NM_006172.1	283	ttctctcaatggccgcaatgaaga	169958	-	peptide hormone	-	-
14995	PPY	NM_002722.1	59	ctctgctgctctctctctcagc	169961	-	peptide hormone	-	-
14996	RETNLB	NM_032579.1	230	caatctccctctctctctctcaaga	169968	-	unknown	-	-
14997	RLN1	NM_006911.2	209	aagcagcagctctctctctctctca	169973	-	peptide hormone	-	-
14998	SRP	NM_033199.2	318	cgctctctctcaagctctctctg	169987	-	adrenocorticotropi	-	-
14999	SS18.1	NM_015558.3	944	gaatccagcagcagctactctatga	169991	-	glycopeptide hormone	-	-
15000	STC1	NM_003155.1	516	ttctacagcgtctctctaaattga	169995	-	glycopeptide hormone	-	-
15001	STC2	NM_003714.1	1006	aaacacagacagctctctgattct	170008	-	glycopeptide hormone	-	-
15002	TG	NM_003235.3	888	cgctctctctctctctctctctctg	170024	-	hormone	-	-
15003	UQN3	NM_053049.1	371	tgatctctctctctctctctctctg	170134	-	-	-	-
15004	UTS2	NM_006788.2	294	cgatgctctctctctctctctctg	170183	-	-	-	-
15005	ADAM11	NM_002350.2	2164	ggatgagcagcagctctctctcaag	170184	-	signal transduction	-	-
15006	ADAM2	NM_001464.2	404	tgagctctctctctctctctctctg	170201	-	metalloendopeptidase	-	-
15007	ADAM22	NM_004194.2	760	tcctctctctctctctctctctctg	170276	-	-	-	-
15008	ADAM23	NM_003812.1	1913	ttgaacagctctctctctctctctg	170380	-	-	-	-
15009	ECM2	NM_001393.1	1608	agctctctctctctctctctctctg	170445	-	-	-	-
15010	ICAM2	NM_000873.2	116	agatctctctctctctctctctctg	170463	-	-	-	-
15011	ICAM3	NM_002162.2	1504	ctggagcagctctctctctctctctg	170488	-	-	-	-
15012	ICAM4	NM_001544.2	518	atggaagcagctctctctctctctg	170492	-	-	-	-
15013	TGFB1	NM_000856.1	1347	ttgctctctctctctctctctctctg	170521	-	-	-	-
15014	DOK4	NM_018110.2	596	gaatgctctctctctctctctctctg	170533	-	-	-	-
15015	DOK5	NM_018431.2	773	cgacgtctctctctctctctctctg	170557	-	-	-	-
15016	FRS3	NM_006653.3	405	cgctctctctctctctctctctctg	170603	-	-	-	-

15017	IFRS4	NM_003604.1	752	cagcgaagcagccctctataaa	receptor activity, signal transduction	170630	-	-
15018	MGC20785	NM_15721.1	854	cgagtcagcagccttagatcaa	kinase related	170706	-	-
15019	CD4	NM_000618.2	382	atgacgcgcctgactcaagaga	receptor activity, signal transduction	170709	-	transmembrane receptor
15020	TLR8	NM_016610.2	1061	ttgacacactctgactactaaa	receptor activity, kinase related	170780	-	-
15021	PDYN	NM_024411.2	691	atgagactgcgcactctctct	kinase related	170846	-	-
15022	IFEA	NM_007273.3	404	tgtgttcagaccacattatct	receptor activity, transcription regulator or	170852	-	-
15023	IBD	NM_001196.2	203	caaggaatgactatcaccaacc	apoptosis	170869	-	-
15024	GPCR5D	NM_018654.1	96	tgcctctctgctcaattctgc	gpcr	170876	-	-
15025	BZRAP1	NM_004758.1	2164	agctctctcagcagcttataac	receptor activity, signal transduction	170900	-	-
15026	ALCAM	NM_001627.1	802	tgaagagcgtctgctctaat	-	170941	-	-
15027	ALSZOR3	NM_015049.1	757	ctgaactcgtctctgcaattg	see also 1080 line	170987	-	-
15028	ANGPT1	NM_001146.3	1617	cgaagacattctacacatgaca	see also 8208 line	171061	-	-
15029	ANGPT2	NM_001147.1	1233	atgcacatctacacttaacatc	see also 727 line	171094	-	-
15030	ANGPT1L1	NM_004673.3	1125	caagttgtccacacattctcc	signal transduction	171133	-	receptor binding
15031	ANGPT1L2	NM_012098.2	596	ttctctgcacaaagcttcaatt	see also 5129 line	171165	-	-
15032	APOB	NM_000384.1	1468	acgcgtgtcacaactatcataag	specific RNA polymerase II transcription factor	171197	-	hypercholesterolemia(高コレステロール血症), atherosclerosis(粥状硬化症), acanthocytosis(有核赤血球異常症), familial hypobetalipoproteinemia(家族性低ベータリポタンパク血症), normotriglyceridemic abetalipoproteinemia(正常トリグリセリド性無βリ蛋白血症), atherosclerosis(粥状硬化症), Alzheimer disease(アルツハイマー病), hyperlipoproteinemia(高リポ蛋白血症), alcoholism(アルコール依存症), Parkinson disease(パーキンソン病), schizophrenia(精神分裂症)(アルツハイマー病), Alzheimer disease(アルツハイマー病), schizophrenia(精神分裂症)(アルツハイマー病), obesity(肥満)
15033	APOE	NM_000041.1	320	agagcttaagagctcacaactgc	transcription factor	171585	-	-
15034	APOF	NM_001638.1	970	ttctgtgtgtcctcacaactgc	transcription factor	171604	-	-
15035	APO12	NM_030862.2	399	cagagagaactctctcacaactgc	transcription factor	171607	-	-
15036	ASP	NM_001672.2	165	ttctgtgtgtcctcacaactgc	transcription factor	171608	-	-
15037	C17	NM_018659.1	205	caagctgactctgacacacaca	transcription factor	171610	-	-
15038	CD	NM_000064.1	3450	tgaagctgattacgcacacacacg	transcription factor	171649	-	-
15039	CD1D	NM_001766.2	1456	agacttaactctccactttaaga	receptor activity	171662	-	-
15040	CD12	NM_001762.1	804	ctctcctcgtggactgataatgc	receptor binding	171688	-	-

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				receptor activity, transcription regulat or,	receptor binding	rheumatoid arthritis(関節炎) pathologic anxiety(病的不安)
15041	CD80	NM_005191.2	754	-	171709	-
15042	DBI	NM_020545.2	171	-	171728	-
15043	ERNA1	NM_004428.2	617	see also 2962 line	171739	-
15044	ENSA	NM_004436.1	469	-	171740	-
15045	P2R	NM_001992.2	1482	receptor activity, signal transduction kinase related	thrombin receptor	-
15046	P2RL1	NM_005242.3	1001	gpr,	thrombin receptor	arthritis(関節炎)
15047	GFR3	NM_001496.2	783	signal transduction	receptor binding	-
15048	GLG1	NM_001220.1	1284	see also 5191 line	-	-
15049	GLIN	NM_007070.2	616	-	171832	-
15050	ICOSL	NM_015259.2	425	signal transduction	receptor binding	-
15051	NIMU	NM_006881.1	210	signal transduction	receptor binding	-
15052	PLXNC1	NM_005761.1	4451	see also 4018 line	171955	-
15053	SELPLG	NM_003008.2	929	-	172005	-
15054	STOML2	NM_013442.1	335	receptor binding	172031	-
15055	TAC3	NM_013251.1	359	signal transduction	172066	-
15056	WNT5A	NM_003392.3	456	tachykinin	172102	-
15057	WNT7A	NM_004823.3	514	signal transduction	172110	-
15058	ZP3	NM_007155.2	548	receptor binding	172121	-
15059	ARHGFP2	NM_004723.2	1788	signal transduction	172123	-
15060	CHN1	NM_001822.2	722	receptor activity	172143	-
15061	CHN2	NM_004067.1	673	see also 3238 line	172169	-
15062	DGKD	NM_003648.2	178	diacylglycerol binding	172216	-
15063	DGKG	NM_001347.2	988	kinase related, signal transduction	172243	-
15064	VAV2	NM_003371.2	2086	kinase related	172295	-
15065	VAV3	NM_006113.3	2422	-	172327	-
15066	ACBD3	NM_022735.3	1170	see also 4249 line	172401	-
15067	ACBD4	NM_024722.1	643	see also 8441 line	172430	-
15068	ACBD5	NM_145698.1	1587	-	172440	-
15069	ACBD6	NM_032360.2	505	see also 9705 line	172472	-
15070	PECI	NM_006117.1	588	see also 8172 line	172484	-
15071	NDUFAB1	NM_005003.2	267	see also 4254 line	172510	-
15072	CPNE1	NM_003915.2	599	acyl carrier	172527	-
				see also 2673 line	172531	-

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15073	CPNE3	NM_003900.1	1258	gagcctatgcctctctctcc	172602	-	see also 2688 line	
15074	GPPE2	NM_019012.2	1913	atgcacatcttcgacatctctc	172652	-	see also 7681 line	
15075	PIK3R1	NM_181504.2	319	tgacacagatgcgcctctctc	172719	-	kinase related	-
15076	PLEKH4	NM_020904.1	1891	ccagcagcttgccgacctctcagaga	172803	-		-
15077	PSOD3	NM_004227.3	253	ccagcagctgcacacacacctctcc	172810	-	receptor activity or, transcription_regulator of, signal_transduction , gpcr	phosphatidylinositol binding phosphatidylinositol 4-, 5- bisphosphate binding
15078	TULP3	NM_003324.2	1271	atgacccgttgattatgctctg	172841	-	see also 5658 line	-
15079	DAPF1	NM_014395.1	722	caactcttcacatcctgattctca	172855	-		-
15080	LYPLA3	NM_012320.2	447	aaacacatgcctctctctctcc	172866	-		-
15081	OSBP1A	NM_018030.3	1457	ctgctcttgcatcattctctg	172900	-		-
15082	PAFAH2	NM_000437.2	762	ccagcagctgaacgcagctcttacc	172970	-		atherosclerosis(粥状硬化症)
15083	PLA2G7	NM_005084.2	446	aggcgcacctctctgctcttctat	172995	-		platelet-activating factor acetylhydrolase deficiency(血小板活性化因子アセチル加水分解 酵素欠乏症)
15084	PLEKHA1	NM_021822.2	1901	ttgttgctctaccatctcttctat	173038	-	see also 8151 line	-
15085	PLEKHA3	NM_019091.2	760	aaatagctccaatgccaaagtctaa	173067	-		-
15086	RASAL1	NM_004658.1	558	ctgacagcagcagcagcagcagc	173073	-		phospholipid
15087	SDPR	NM_004657.3	589	ccacacacacattccaaagtctc	173092	-		-
15088	SEC14L2	NM_012429.1	281	ctgcacatccacagctctcttctt	173100	-	transcription_regulator or	-
15089	SYT1	NM_005639.1	942	aggctgctctaccatctctctctg	173131	-	see also 3914 line	-
15090	FABP2	NM_000134.2	256	ttgctctcactctcttctctcaacg	173142	-		lipid transporter
15091	FABP3	NM_004102.2	79	atgacacacacagctctctctctg	173146	-		lipid transporter
15092	FABP4	NM_001445.1	390	atgacacacacagctctctctctg	173158	-		transporter
15093	FABP6	NM_001445.1	194	tgagatctctctctctctctctctc	173163	-		transporter
15094	RBP3	NM_002900.1	3374	cgagagatctcactctctctctg	173185	-	see also 1939 line	-
15095	ALB	NM_000477.3	881	ggcgcgcacctctgcacagctctc	173202	-		atherosclerosis(粥状硬化症), anabunimial(無 アルブミン血症), dysalbuminemic hyperthyroxinemia(高サイロキシン血症), hyperzinemia(高亜鉛血症) atherosclerosis(粥状硬化症)
15096	APOA4	NM_000482.2	200	caatctcttgagacacctctctcgc	173229	-		Hepatocyte nuclear factor 1 lipid transporter
15097	APOA5	NM_062968.2	979	tcgccacagagtttcaacaacaca	173239	-		lipid binding
15098	ATP5G1	NM_005176.1	164	ctgttttgcacagagttctctctca	173250	-		-
15099	ATP5G2	NM_005176.3	80	atgttgcctctctcagagttctct	173253	-		lipid binding
15100	ATP5G3	NM_001689.1	372	gaagctctctcagagttctctctg	173257	-		lipid binding
15101	BPI	NM_001725.1	84	ctgcctctctcagacacagttctc	173273	-		lipid binding
15102	BPI1L	NM_025227.1	294	ttactctctctctcagagttctct	173291	-		-
15103	BPI2L	NM_174932.1	839	ttgaatccagagttctctctctctt	173313	-		-
15104	BPI3L	NM_174937.1	598	atgacagctctcagagttctctctt	173344	-	see also 10124 line	-
15105	C20orf114	NM_033197.2	1118	aagcctctcagctctcagctctgaa	173366	-		-

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15106	CE1P	NM_000078.1	1451	cgctcgcgagtaactttacacg	173396	-	-	Smad3/Sp-1 heterodimer	atherosclerosis(粥状硬化症)
15107	CRABP2	NM_001878.2	367	tgcctgagagagcccttgaagacg	173407	-	signal transduction	-	-
15108	CRBPV	NM_002960.1	107	ctgcctcgcgagcttgcacttttc	173410	-	transcription regulator	transporter	-
15109	ED3	NM_005282.2	797	tgcgcgcgacttgcactgaatgc	173415	-	see also 3663 line	-	-
15110	ED5	NM_004230.1	821	tgcgcgtctccacccctgaattcc	173435	-	receptor activity, kinase related, signal transduction, gpcr	-	-
15111	ED6	NM_003775.1	251	tgcgcgcgcttggtctctactattg	173439	-	receptor activity, signal transduction, gpcr	-	-
15112	ED67	NM_012152.1	695	acgtctgtctccctacatacaagt	173447	-	receptor activity, gpcr	-	-
15113	FABP1	NM_001443.1	347	cgcgaactcaacgcgcacataatc	173458	-	-	lipid transporter	-
15114	FABP7	NM_001446.3	400	gttcaacaacaacacgtaataat	173462	-	-	lipid binding	-
15115	LBP	NM_004135.2	954	atgtatccgccttaactctaant	173492	-	-	lipid binding	-
15116	LIPF	NM_004190.1	867	ttagatgtgtatctatcacataa	173523	-	-	triacylglycerol lipase	-
15117	PCTP	NM_021213.1	458	aggtgtctcgggtgaagcaatac	173616	-	-	phosphatidylcholine transporter	-
15118	PITPN	NM_006224.2	638	ttagagccgctatataagcatt	173632	-	see also 4317 line	-	-
15119	PITPNB	NM_012399.2	307	gcctaacccctctctgacacat	173651	-	-	phosphatidylinositol transporter	-
15120	PLIN	NM_002665.1	214	gccttgcacccctgcgaactctcca	173656	-	-	lipid binding	diabetes(糖尿病)
15121	PLTP	NM_006221.2	1748	ctgcgcgagcttcgactatcttc	173670	-	-	-	atherosclerosis(粥状硬化症)
15122	PMP2	NM_002677.2	367	gcagagctcaactgaatcgaatgc	173679	-	-	transporter	-
15123	PSAP	NM_002776.1	742	ctgccttgcgcgcctatgcgaag	173684	-	-	-	combined SAP deficiency (deficiency of SAP1 and SAP2)-, Gaucher disease(ゴーシェ病), metachromatic leukodystrophy(異染色性脂白質シストロフィー)
15124	RBP1	NM_002695.2	259	agagagctgcacctatgtctctc	173695	-	-	lipid binding	-
15125	RBP2	NM_004164.2	216	tgcacactccgcaactctgctg	173703	-	-	transporter	-
15126	RRAG	NM_022157.2	178	ctgaacactgcgcacacacattg	173742	-	see also 8315 line	-	-
15127	SCP2	NM_002679.2	1806	atgtgtctgcctatgaagctaca	173760	-	-	sterol carrier	Zellweger syndrome(ワルデンブルグ症候群)
15128	SEC14L3	NM_174975.2	448	tgcgaacactctgctgatattt	173785	-	-	-	-
15129	SEC14L4	NM_174977.2	643	agaatttaattgtctatgcgc	173814	-	-	-	-
15130	STAR	NM_000248.1	168	cagccactccgcacactgaag	173815	-	-	transcription co-activator	lipid congenital adrenal hyperplasia(副腎皮質過形成)
15131	STAR03	NM_006804.2	1394	acgcgcacactgtttgaatttgc	173835	-	see also 4784 line	-	-
15132	STAR04	NM_133164.1	299	cagagccctgcctcttgaatttgc	173842	-	-	-	-
15133	STAR06	NM_133171.1	255	cagagctgctgcgcacattca	173869	-	-	-	-

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15134	CD209	NM_021155.2	1098	cttcaacacgaacaaatctaac	173906	-	receptor activity	-	-
15135	LMAN2L	NM_030805.1	160	agctcaacactcagctctctgac	173903	-	-	-	-
15136	MBL2	NM_000242.1	109	tgacacactctctctcagaaact	173921	-	-	opsonin	-
15137	APCS	NM_001839.2	356	tggagagatagatgctctaacatt	173939	-	-	structural molecule	juvenile rheumatoid arthritis(若年低慢性関節リウマチ)
15138	ASGR1	NM_001871.2	701	cttctctctctctctctctctctct	173944	-	receptor activity	lectin	-
15139	ATRN	NM_012070.2	2424	cttctctctctctctctctctctct	174014	-	see also 5106 line	-	-
15140	BCAN	NM_021945.3	924	tgctctctctctctctctctctct	174047	-	-	-	-
15141	C14orf27	NM_175060.1	1002	caagctctctctctctctctctct	174061	-	-	-	-
15142	C2orf63	NM_058187.3	1573	tggaactctctctctctctctctct	174084	-	-	lectin	-
15143	CD207	NM_015171.1	801	tgattgattgctctctctctctct	174113	-	-	-	-
15144	CD208L	NM_014257.2	1105	cttctctgaagcgaacactcagctg	174117	-	receptor activity	-	-
15145	CD22	NM_001777.1	560	tggctctctctctctctctctctct	174129	-	-	lectin	-
15146	CD33	NM_001772.1	1067	aggacacactctacgaactactct	174167	-	receptor activity, signal transduction	receptor	leukemia(白血病)
15147	CD89	NM_001781.1	287	caagctcaactacacactctctaatg	174172	-	receptor activity, signal transduction	transmembrane receptor	-
15148	CHODL	NM_024944.2	862	tgagctctctctctctctctctct	174181	-	-	lectin	-
15149	CHST4	NM_005769.1	1037	caagctctctctctctctctctct	174205	-	-	-	-
15150	CLEC1	NM_016511.2	363	aggaaatgctctctctctctctct	174219	-	-	-	-
15151	CLEC2	NM_016509.1	574	gaagatgctctctctctctctctct	174237	-	receptor activity, signal transduction	-	-
15152	CLEC5F1	NM_005759.1	482	atgctctctctctctctctctctct	174248	-	-	lectin	-
15153	CLEC5F11	NM_130441.1	1021	atgctctctctctctctctctctct	174268	-	-	-	-
15154	CLEC5F12	NM_022570.3	194	tgatctctctctctctctctctct	174274	-	receptor activity	-	-
15155	CLEC5F13	NM_006343.1	489	caagctctctctctctctctctct	174304	-	-	-	-
15156	CLEC5F13	NM_173335.1	546	aagatgctctctctctctctctct	174323	-	-	-	-
15157	CLEC5F2	NM_005127.2	960	cgcactctctctctctctctctct	174356	-	-	lectin	-
15158	CLEC5F5	NM_013252.2	679	gtgctgcaacttgcctctctctct	174374	-	receptor activity, signal transduction	-	-
15159	CLEC5F6	NM_016184.2	848	gaagctctctctctctctctctct	174384	-	receptor activity, signal transduction	-	-
15160	CLEC5F8	NM_080387.4	596	ctgtgtagagcagctctctctct	174402	-	-	-	-
15161	CLEC5F9	NM_0143558.1	608	gttgctgagcagcagctctctct	174426	-	-	-	-
15162	CLL-1	NM_138337.2	365	aagcacttctctctctctctctct	174429	-	receptor activity	-	-
15163	COLEC10	NM_006438.2	604	agactctctctctctctctctct	174462	-	-	-	-
15164	COLEC12	NM_030781.2	686	aggctctctctctctctctctct	174488	-	receptor activity	-	-
15165	CSAD	NM_015989.2	738	gaagctctctctctctctctctct	174526	-	-	sulfonamide decarboxylase	-
15166	DCL-1	NM_014880.3	684	coracacacacacacactctaat	174549	-	receptor activity	-	-
15167	DGCR2	NM_005137.1	953	ctctctctctctctctctctctct	174553	-	see also 3612 line	-	-
15168	DTY2	NM_020892.1	2016	ctctctctctctctctctctctct	174570	-	-	-	-
15169	FCN3	NM_003865.2	707	atgagctctctctctctctctct	174576	-	-	-	-
15170	GCHR	NM_001486.2	282	tgactctctctctctctctctct	174582	-	-	sugar binding	-

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15171	GFPT1	NM_002056.1	577	tgccacagctcgtaagtgatg	174815	-	see also 1329 line
15172	GFPT2	NM_005110.1	217	ktctccatcctgagggaataaca	174855	-	see also 3581 line
15173	ILRN1	NM_017182.2	1010	caatccatcgatgaactcgaag	174708	-	-
15174	ILRN2	NM_008075.2	767	ccpatagtcgaacgggaattgt	174714	-	-
15175	KLFB1	NM_002258.1	490	ctgatactgcacaaagaactct	174742	-	receptor activity,
15176	KLFC1	NM_002259.2	503	ttgttaacgaagattttttcttc	174758	-	signal transduction
15177	KLRC4	NM_013431.1	473	ttggactctgacacacacaaatt	174760	-	receptor activity,
15178	KLRD1	NM_002262.2	708	aaataacttcatactcgtataatcc	174775	-	signal transduction
15179	KLRF1	NM_016523.1	573	actatagatggcgttaactttt	174789	-	receptor activity,
15180	KLRG1	NM_005810.2	250	ccctcgataaataatggttaacc	174812	-	signal transduction
15181	KLRI1	NM_007380.1	757	aaagacacacagatttacttaaa	174830	-	signal transduction
15182	LGALS1	NM_002305.2	373	caatagatgatagaactcaatctc	174844	-	apoptosis,
15183	LGALS2	NM_006498.1	32	ggaggaactttgaggttaagaaca	174847	-	kinase related
15184	LGALS4	NM_006149.2	186	aagcgtctctctggaactttgt	174851	-	galactose binding
15185	LGALS8	NM_006498.2	1100	tgagcgaactctcgtctgaag	174879	-	galactose binding
15186	LGALS9	NM_002308.2	926	tggtcgaacctgttgataact	174887	-	lectin
15187	ULT1	NM_013269.1	171	ttgctctttaagcgaataaga	174895	-	galactose binding
15188	LMAN1	NM_005570.2	1361	gaaggacatagataactatgac	174942	-	lectin
15189	LMANIL	NM_021819.1	52	ttgttcgaagctccctttatctgc	174958	-	galactose binding
15190	LMAN2	NM_006816.1	777	cgagcgaactctgcaactcatg	174977	-	protein transporter
15191	LOC14390	NM_178834.2	1179	taagggtctcaaatgtcgaataga	174992	-	-
15192	UPH1	NM_014921.1	1084	ggttcggaagaagcgaacttgaac	175008	-	-
15193	UPH2	NM_012302.1	936	tgagcgaagccataatcaatg	175060	-	receptor activity,
15194	UPH3	NM_015236.1	1204	tgatttttcgaactgagatgaag	175192	-	apoc,
15195	LV6Q5C	NM_025262.1	325	gaacagaagatctttcttcaaa	175286	-	signal transduction
15196	LV75	NM_002348.1	4608	aactcttcgctcttcttcattctc	175444	-	-
15197	MAG	NM_002261.2	1199	gagcaaccgcgaaccttattctca	175477	-	see also 1518 line
15198	MRC2	NM_006039.1	1442	cggtctcaagaattggaactgac	175493	-	lectin
15199	NALP9	NM_176820.2	1408	acgtcccaagaagatctctaac	175535	-	kinase related,
15200	NPTX2	NM_002523.1	806	gaagcaatagcgccttgaatga	175561	-	receptor activity
						-	see also 1620 line

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15201	NRP3	NM_020645.1	441	cgagctctctctataatactcaatc	175884	-	-	-	-	atherosclerosis(粥状硬化症), Alzheimer disease(アルツハイマー病)
15202	OLR1	NM_002543.2	248	ggtctgaactcttaacacaaaga	175888	-	receptor activity	-	-	-
15203	PLAQR1	NM_007386.2	1001	agaggaagagctcttaagctatca	175924	-	receptor activity	-	-	-
15204	PRG2	NM_002728.3	447	tgctctcatctcaactctcaat	175724	-	-	translation	-	-
15205	PRG3	NM_006093.2	472	tgcgaagagctcaagatgctgcgc	175733	-	-	-	-	-
15206	REG4	NM_032044.2	527	ggagagcagcgcctatgatgctgc	175746	-	-	-	-	-
15207	SELE	NM_000450.1	1238	ggagcagagctcttgatgctct	175774	-	-	Transcription factor p55	-	atherosclerosis(粥状硬化症)
15208	SELL	NM_000655.2	519	atracgctctccacaactaaaga	175794	-	-	lectin	-	-
15209	SELP	NM_003005.2	1270	ctgtctcagcagcatgctgctc	175828	-	-	Nuclear factor NF-kappa-B p50 subunit	-	atherosclerosis(粥状硬化症), myocardial infarction(心筋梗塞)
15210	SFTPD	NM_003019.2	738	gagcctctacagagcagaactga	175856	-	-	surfactant	-	-
15211	SIGLEC10	NM_033130.2	480	gagcggcgtctatgtgagatata	175859	-	-	-	-	-
15212	SIGLEC11	NM_052884.1	1353	tgagctgcacccatctcaatg	175869	-	-	-	-	-
15213	SIGLEC8	NM_001245.2	1363	cgacttcagacagcagctgcttc	175880	-	-	receptor activity	-	-
15214	SIGLEC7	NM_014385.1	264	ggacacaggaatgataagctcga	175881	-	-	receptor activity	-	-
15215	SIGLEC8	NM_014442.1	406	aagagagatagaagctctcatatt	175884	-	-	signal transduction	-	-
15216	SIGLEC11	NM_033329.1	733	ctgtctgcagctcaactctctat	175896	-	-	-	-	-
15217	SN	NM_023068.2	2768	cgagggagagctctatctctctg	175821	-	-	lectin	-	-
15218	TNA	NM_003278.1	203	atgtctgacacacacagatgctt	175836	-	-	lectin	-	-
15219	ZDHHC19	NM_144837.2	846	catcaactgctatctaacacattt	175841	-	-	-	-	-
15220	CHIA	NM_021797.1	1027	cagccctctggcctcatatctgc	175948	-	-	-	-	-
15221	CHIT1	NM_003465.1	1307	ggagacagctcaagctctctcgaag	175957	-	-	-	-	atherosclerosis(粥状硬化症), chitotriosidase deficiency(キトランナーゼ欠損症)
15222	TACR1	NM_001058.2	740	ggatctgtgagcatgctgagtg	175967	-	see also 550 line	-	-	-
15223	TACR2	NM_001057.1	622	ctgcgctcgcggctgattttgt	175981	-	see also 649 line	-	-	-
15224	TACR3	NM_001059.1	689	caagttatgctctattttatg	175989	-	gpcr, receptor activity, signal transduction	-	tachykinin receptor	-
15225	NPY1R	NM_000908.3	1434	aagcaagccagctgcatttaaaa	176050	-	gpcr, receptor activity	-	neuropeptide Y receptor	-
15226	NPY2R	NM_000910.2	1053	ccaggaattctgctgattttaga	176065	-	see also 592 line	-	-	-
15227	NPY5R	NM_006174.2	190	taagctgcagcagttatataac	176080	-	see also 4270 line	-	-	-
15228	GPR66	NM_006056.2	547	ccgcagagctactcttttgatgag	176108	-	gpcr, signal transduction	-	-	-
15229	NMN2R	NM_020167.3	1266	agagctgacagagatagagctcc	176128	-	receptor activity, gpcr, channel	-	-	-
15230	GPR74	NM_004885.1	663	ctgcccataagtgattactact	176150	-	gpcr, signal transduction	-	-	-

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15231	HCR1R2	NM_001526.2	514	gtattctctgtactctcttgg	176184	gpcr, signal transduction	orexin receptor	-
15232	OTTT022	NM_022146.1	549	ccgtgagagacaccccttctgg	176221	gpcr, receptor activity, signal transduction	neuropeptide receptor	-
15233	SORCS3	NM_014978.1	1302	gtcgggacacggatgatctgc	176236	receptor activity, signal transduction	-	-
15234	OPRM1	NM_000914.1	849	aggcaagttctctctagattgac	176326	gpcr, signal transduction	mu-opioid receptor	alcoholism(アルコール依存症)
15235	OPRK1	NM_000912.2	620	tcrtgtctatcgtatcacaaag	176338	receptor activity, signal transduction	kappa-opioid receptor	-
15236	OPRD1	NM_000911.2	454	tcgtcgggtacactaaagtgaag	176357	receptor activity, signal transduction	delta-opioid receptor	alcoholism(アルコール依存症), melanoma(メラノーマ)
15237	GPR7	NM_005285.1	338	tgctctatcagcagatcacacc	176363	gpcr, signal transduction	opioid receptor	-
15238	OGFR	NM_007348.2	251	gtatgattctcggacaaactctc	176368	receptor activity	-	-
15239	OPOML	NM_002549.2	423	acgtccaggcttcacctatagt	176383	receptor activity	opioid receptor	-
15240	MC2R	NM_000529.1	192	tgacttggtccatctctgatctgc	176397	gpcr, receptor activity	transcription co-activator	familial glucocorticoid deficiency(グルココルチコイド欠損症), adrenocortical cancer(副腎皮質癌)
15241	MC1R	NM_002386.2	1054	tcgccttgagcgcctactctctc	176408	gpcr, receptor activity	melanocyte stimulating hormone receptor	melanoma(メラノーマ), dysplastic nevus syndrome(デイスプラスチック・ニューバス条痕群)
15242	MC3R	NM_019886.2	1022	tggaaattgcgcacacactttag	176418	gpcr, receptor activity	melanocortin receptor	diabetes mellitus(糖尿病), diabetes(糖尿病), obesity(肥満)
15243	MC4R	NM_005912.1	490	aaatcggttggtatctctatgaag	176435	gpcr, see also 4133 line	receptor activity	-
15244	SSTR1	NM_001049.2	1024	tggaaetggtccaactgttccac	176460	gpcr, receptor activity	somatostatin receptor	neuroblastoma(神経芽細胞瘤)
15245	SSTR2	NM_001050.1	523	ttgcctcatgatatactctgg	176479	gpcr, receptor activity	somatostatin receptor	neuroblastoma(神経芽細胞瘤), small cell lung cancer(肺癌)
15246	SSTR3	NM_001051.1	603	ctggcctacgcggcttcactcatct	176486	gpcr, receptor activity, apoptosis	somatostatin receptor	-
15247	AVPR2	NM_000954.2	1045	gaagatgacctactatcttctgg	176490	gpcr, receptor activity, signal transduction	vasopressin receptor	diabetes insipidus(尿崩症)
15248	OXTR	NM_000918.3	1539	aggaaactcgccctctactctc	176494	gpcr, receptor activity	vasopressin receptor	-
15249	F2RL2	NM_004101.2	1215	tgtgctgctggatcttaataag	176532	gpcr, signal transduction	thrombin receptor	-

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15250	GP1BA	NM_000173.1	631	gaagaaactgactgatacaataacc	176539	-	receptor activity, signal transduction	thrombin receptor	giant platelet syndrome (Bernard-Soulier syndrome, thrombocytopenia) (ベルナール・スーリエ症候群), von Willebrand pseudohemophilia (フォン・ウィルブランド病)
15251	FPRI	NM_002029.3	889	caatcaggaatccgaatgaattatg	176564	-	gpor, receptor activity, kinase related	N-formyl peptide receptor	
15252	FPRI	NM_001462.1	1205	atgagctgcggacattgattct	176572	-	gpor, receptor activity, signal transduction	N-formyl peptide receptor	
15253	FPRI	NM_002030.3	1098	tggatgcgtgaacttcgaagaaga	176599	-	gpor, receptor activity, signal transduction	N-formyl peptide receptor	
15254	GALRI	NM_001480.2	1702	caaggagcctatacaacaagttgt	176609	-	gpor, receptor activity, signal transduction	galanin receptor	
15255	GALRI	NM_003857.2	1218	caagctctgacgttgattgttgg	176615	-	gpor, receptor activity, signal transduction	galanin receptor	
15256	AGTRI	NM_000865.3	1174	ttgattcaactgagcattatcacc	176644	-	gpor, receptor activity, signal transduction		Alzheimer disease (アルツハイマー病), essential hypertension (本態性高血圧)
15257	AGTRI	NM_000866.3	1095	ctggttaactcgtttctctatt	176660	-	see also 429 line		
15258	MAS1	NM_002377.2	273	ttgtctacgaactgatttata	176690	-	gpor, receptor activity, signal transduction	angiotensin type II receptor	
15259	EDNRA	NM_001957.1	669	atagctcaatgacacactatgac	176709	-	gpor, receptor activity, signal transduction	endothelin receptor	
15260	EDNRA	NM_000115.1	633	gggaagctgctccatattcttga	176739	-	see also 97 line		Alzheimer disease (アルツハイマー病)
15261	OCKAR	NM_000730.1	870	atgactcgttccattattatg	176776	-	gpor, receptor activity	cholecystokinin receptor	diabetes mellitus (糖尿病), alcoholism (アルコール依存症), diabetes (糖尿病)
15262	CKBR	NM_176675.2	328	ctggagcggagacagaattgg	176788	-	-	phosphatidylinositol 13-kinase, class I, regulator	
15263	BKRB1	NM_000710.2	1120	caagctccctgaatccgtaattt	176810	-	gpor, receptor activity, signal transduction	bradykinin receptor	
15264	BKRB2	NM_000623.2	1058	acagagcgaatcagctgattatc	176817	-	gpor, receptor activity, signal transduction		
15265	BRS3	NM_001727.1	656	ctgagcttgatctctatgaga	176842	-	see also 1148 line	bradykinin receptor	

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15266	NMBR	NM_002511.1	998	actatagctgtcttcaacabaa	176982	-	receptor activity, gpcr	-	bombesin receptor	-
15267	C5R1	NM_001736.1	673	acgtctcaagctgtttgaacttt	176988	-	receptor activity, gpcr, kinase related	-	C5a anaphylatoxin receptor	-
15268	C3AR1	NM_004054.2	1090	tctctggcaataacgtactcctagg	176932	-	receptor activity, signal transduction	-	complement component C3a receptor	-
15269	HCRTR1	NM_001525.1	1097	gcctctcaatgctcttcaagagg	176941	-	receptor activity, gpcr, signal transduction	-	orexin receptor	-
15270	NTSR1	NM_002531.1	536	acgtgaaccgaactactactcc	176942	-	receptor activity, signal transduction	-	neurotensin receptor, G-protein coupled	-
15271	NTSR2	NM_012344.2	1064	caaaacatcctgtctgtcatgag	176957	-	receptor activity, signal transduction	-	neurotransmitters sodium symporter	-
15272	GRPR	NM_005314.1	1107	ctgctccagagcttcaactct	176982	-	receptor activity, gpcr	-	bombesin receptor	actism(自閉症), non-small-cell lung cancer(非小細胞肺癌)
15273	NPR3	NM_000908.1	1283	gagacagcatgaggtctctct	177000	-	receptor activity, gpcr	-	peptide receptor, G-protein coupled	-
15274	BRAP	NM_006768.2	1158	atctctgtctgacgtcttctaaag	177044	-	see also 4773 line	-	-	-
15275	KPNA3	NM_002261.2	1647	agctatctctctctgtctgaatt	177077	-	see also 1454 line	-	-	-
15276	KPNA2	NM_002270.2	2933	aaatcatctgagctgtctctact	177088	-	see also 1464 line	-	-	-
15277	TNP02	NM_011333.2	1385	atctctctgtctgtctgaattg	177151	-	-	-	-	-
15278	KDEL1	NM_006801.2	436	agttcaagactacttaagtag	177166	-	receptor activity	-	protein transporter	-
15279	KDEL2	NM_006854.2	563	tcctatctcaagactctctctaac	177183	-	receptor activity	-	protein transporter	-
15280	PEX7	NM_000286.1	853	ctgtctcttctctgtatgattt	177204	-	see also 253 line	-	-	-
15281	IPXR1	NM_000319.3	581	ccgtctctgtctgtatgattt	177220	-	see also 268 line	-	-	-
15282	SSR2	NM_003145.2	208	ctgaattagctgtgaactactt	177238	-	see also 2126 line	-	-	-
15283	SSR3	NM_007107.2	250	atgacctgtagtcaacatctt	177254	-	see also 4952 line	-	-	-
15284	TOMM34	NM_006806.4	405	ctctgctgagatgacctcttga	177266	-	-	-	-	-
15285	NKTR	NM_005385.2	4092	acctctagctgagatgagtag	177373	-	see also 3746 line	-	-	-
15286	PIPH	NM_005347.2	87	aggaattgtccatctgaagatc	177402	-	-	-	-	-
15287	AAMP	NM_001087.1	300	taccagatctaacctttctcttcc	177411	-	-	-	heparin binding	-
15288	APOH	NM_000042.1	308	ataatctccatctctatcagct	177411	-	-	-	heparin binding	-
15289	GOL5A1	NM_000093.2	1747	aggaagctgagatgattcagcgc	177484	-	see also 68 line	-	-	-
15290	HBP17	NM_005130.1	422	gaagagctctatgaaacacgt	177515	-	signal transduction	-	-	-
15291	HRG	NM_000412.2	121	aaactctagacctgctcaacaa	177521	-	-	-	thrombophilia due to HRG deficiency(ヘレグリン欠損による血栓)	-
15292	LAMC2	NM_005562.1	1796	atctcagatctgctcaacgaacc	177590	-	see also 3866 line	-	heparin binding	atherosclerosis(粥状硬化症), hepatic lipase deficiency(肝性リパーゼ欠損症)
15293	LIPC	NM_000236.1	240	ctctcagatgctgactcaatc	177618	-	-	-	tricylglycerol lipase	-

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15294	LIPQ	NM_000033.1	525	atgagcgtatgacgactatcttgc	177645	-	tricyclic lipase	atherosclerosis (粥状硬化症)
15295	LPL	NM_000237.1	1370	ttagagactactatctatctgag	177699	-	lipoprotein lipase	atherosclerosis (粥状硬化症), hyperlipoproteinemia (高リポ蛋白血症)
15296	ODZ1	NM_014253.1	5589	catggctatctatctatgactct	177688	-	see also 5559 line	
15297	SERPINC1	NM_000488.1	254	aggcgaactccgcttctgctacc	177925	-	Thyroid hormone receptor beta-2	thrombophilia due to antithrombin III deficiency (アンチトロンピン III 欠損による血栓症)
15298	SERPINC1	NM_000185.2	951	aggctctcgttggaataactctc	177948	-	serpin	thrombophilia due to heparin cofactor II deficiency (ヘパリン・コファクター II 欠損による血
15299	SERPINC2	NM_006216.2	528	atgctaacgcctctgttttttaa	177892	-	serpin	
15300	VTIN	NM_000938.2	1820	aattactaccgaatcaactctgc	178003	-	heparin binding	
15301	HAPLN3	NM_178232.2	1172	gagccgctctgaactcttctact	178013	-	-	
15302	HMMR	NM_012484.1	239	aggttaattcttgcgaatcaag	178020	-	-	
15303	IMP32	NM_016247.1	3477	ttctctgcccctctgcatcag	178144	-	see also 6751 line	
15304	TM6SF2	NM_023002.1	661	gcgcgacgcctcagtcgaatacc	178156	-	signal transduction	
15305	TNFAIP6	NM_007115.2	261	gcggcctctcgcgaactcaaacg	178162	-	damaged DNA binding	
15306	XLKD1	NM_006891.2	475	atgcatctctgctctctctcag	178186	-	-	
15307	DSPG3	NM_004950.2	964	agccactaagagacactcagctg	178218	-	-	
15308	HABP2	NM_004132.2	228	caactcagagatattatctaacg	178224	-	-	
15309	PODLX2	NM_015720.1	393	gaagaaggaaggtctcattgaacga	178249	-	-	
15310	TGFBR3	NM_003243.1	1886	atgtctctctctctatactctc	178295	-	receptor activity, signal transduction	
15311	GABRA1	NM_000806.3	397	caatcgcctatcaaatgact	178308	-	channel, receptor activity, signal transduction	Parkinson disease (パーキンソン病)
15312	GABRA2	NM_000907.1	1283	aggctctctctctatcctcagac	178377	-	benzodiazepine receptor	
15313	GABRA4	NM_000809.2	990	caatcctcctctatgactcagttt	178438	-	see also 499 line	
15314	GABRA5	NM_000810.2	1352	tgcgcgcgtcactcttctaac	178475	-	see also 502 line	
15315	GABRA6	NM_000811.1	988	tccgaactcctcactcttctaac	178517	-	see also 503 line	
15316	GABRB1	NM_000812.2	1001	aagcagatgattatctctgag	178548	-	see also 504 line	
15317	GABRG3	NM_000814.3	1496	aggctcgtttctcactcctt	178616	-	channel, receptor activity, signal transduction	
15318	GABRD	NM_000815.2	759	gcgcgtctctatcatcactcctc	178622	-	GABA-A receptor	
15319	GABRE	NM_004961.2	1425	ctgctcgtctcccgattgtaggc	178657	-	receptor activity, signal transduction	
15320	GABRG1	NM_173536.2	807	tgtgaagtttagaactcaact	178691	-	channel, receptor activity, signal transduction	alcoholism (アルコール依存症)
15321	GABRG2	NM_000816.2	592	tgtcctcagtcgcctcactcacta	178715	-	see also 512 line	
15322	GABRG3	NM_033223.1	160	aagtcacgcgcgtcactcctt	178751	-	see also 9381 line	

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15323	GABRP	NM_014211.1	988	tttcaatgacacgcgttatca	178785	channel receptor activity	GABA-A receptor	-
15324	GABRQ	NM_018558.1	213	agatgctctcaaatcaatgctg	178806	see also 17824 line		
15325	GABRR1	NM_002042.2	357	agattgaatgagcttcttcagtg	178890	channel receptor activity, signal transduction	GABA-A receptor	-
15326	GABRR2	NM_002043.1	180	atgcacgaagccaaftcacttata	178873	channel receptor activity, signal transduction	GABA-A receptor	-
15327	GABRR1	NM_001470.1	742	gttatcatcgagcactctttccc	178884	see also 1017 line		
15328	CHRM1	NM_000738.2	1289	tgcttcgaagtgagtgatcaaga	178923	see also 479 line		
15329	CHRM2	NM_000739.1	514	tgatgctggagatgctcatctca	178937	gpcr, receptor activity	muscarinic acetylcholine receptor	-
15330	CHRM3	NM_000740.1	202	gtgttcttcactgcttcttcaac	178958	gpcr, receptor activity, signal transduction	muscarinic acetylcholine receptor	-
15331	CHRM5	NM_012125.2	322	ggatgcttctacacaaatgcaccc	178981	gpcr, receptor activity	muscarinic acetylcholine receptor	-
15332	CHRNA1	NM_000078.1	123	cctctctgtgcaagactattta	178994	channel receptor activity, signal transduction	nicotinic acetylcholine-activated cation-selective channel	myasthenic syndrome(筋無力症候群)
15333	CHRNA2	NM_000742.1	1962	ctggaagtgctgactcaattgc	179010	channel, receptor activity, signal transduction	nicotinic acetylcholine-activated cation-selective channel	-
15334	CHRNA3	NM_000743.2	717	cgcttctctgctctcgtgtaagg	179020	channel, receptor activity, signal transduction	nicotinic acetylcholine-activated cation-selective channel	-
15335	CHRNA4	NM_000744.2	1933	ctgagagctcctcagatcatctgc	179045	channel, receptor activity, signal transduction	nicotinic acetylcholine-activated cation-selective channel	-
15336	CHRNA5	NM_000745.2	639	ctggaactcaccgcgaactaca	179061	channel, receptor activity, signal transduction	nicotinic acetylcholine-activated cation-selective channel	-
15337	CHRNA6	NM_004198.2	302	ctctcctcactctggaatgatta	179099	channel, receptor activity, signal transduction	nicotinic acetylcholine-activated cation-selective channel	-

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15338	CHRNA7	NM_000746.2	357	aggagctgaagactgtgtttcc	179129	-	see also 480 line	nicotinic acetylcholine-activated cation-selective channel	-
15339	CHRNA1	NM_000747.1	1048	ttgagctcgtcagctcttcattc	179139	-		nicotinic acetylcholine-activated cation-selective channel	-
15340	CHRNA2	NM_000748.1	928	acgtgagatcaagctgacttc	179164	-		nicotinic acetylcholine-activated cation-selective channel	epilepsy(てんかん)
15341	CHRNA4	NM_000750.1	771	cagctcactggagctgacttcag	179170	-		nicotinic acetylcholine-activated cation-selective channel	-
15342	CHRNA5	NM_000751.1	86	ctgactcgcacactgtttcaaga	179175	-		nicotinic acetylcholine-activated cation-selective channel	myasthenic syndrome(筋無力症候群)
15343	CHRNA6	NM_000860.2	239	tgaactcgtgtggcaggtttacc	179185	-	see also 49 line	nicotinic acetylcholine receptor-associated protein	-
15344	CHRNA10	NM_020402.2	409	cggtcagactcgtactctctaaa	179205	-		nicotinic acetylcholine-activated cation-selective channel	-
15345	CHRNA9	NM_017581.1	197	cagattacactctctctgattaa	179216	-		nicotinic acetylcholine-activated cation-selective channel	-
15346	CHRNA3	NM_000749.2	254	atggttcgcctcgtgacttcaatt	179258	-		nicotinic acetylcholine-activated cation-selective channel	-
15347	GLRA1	NM_000171.1	297	atgtcagacttcaatctctctg	179286	-		glycine-inhibited chloride channel	startle disease(びくびく病)、diabetes(糖尿病)
15348	GLRA3	NM_006529.1	676	gaagacgactgattacagagt	179313	-	see also 4533 line	channel, receptor activity, signal transduction	
15349	GLRB	NM_000824.2	1430	tgaactctcaattgtgctgc	179375	-	see also 322 line	channel, receptor activity	
15350	HTTR3C	NM_130770.1	466	cgactgtaagtcgaattgaagt	179397	-		sterol transporter	D-bifunctional protein deficiency(-)
15351	C20orf79	NM_178483.1	336	gcgtgtgcccattgctctggaag	179408	-		electron androgen binding	alcoholism(アルコール依存症)
15352	HSID17B4	NM_000414.1	1353	agatcgcgtgtgtgattatata	179419	-	see also 3343 line	oxysterol binding	
15353	STOML1	NM_004803.3	296	ctggttggccctgaagatgtg	179466	-			
15354	ALDH1A1	NM_000869.3	474	cgagccgctcaatcaccactaa	179492	-			
15355	SCGB2A1	NM_002407.1	328	tgaattatataagagatgaatt	179538	-			
15356	SHBG	NM_001040.2	259	gggtgacacacacaaagctga	179540	-			
15357	OSBP	NM_002556.2	1256	acgaagagccacacacttttga	179551	-			

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13358	OSBP1.5	NM_020896.2	1768	tcagctgctgagagcaacttc	179592	-	see also 8019 line	-
13359	PGRC1	NM_006667.2	545	ggagctcagctcactctcag	179594	-	receptor activity	steroid binding
13360	PGRC2	NM_006320.1	647	agagcaagcagctcactcaaaa	179598	-	receptor activity	steroid hormone receptor
13361	SCGB2A2	NM_023411.1	209	tagagcaagcagctcactcaaaa	179600	-	-	steroid binding
13362	SRPNA6	NM_001756.2	976	agctgagctcagctcactcaaaa	179611	-	-	steroid binding
13363	SIE	NM_004202.2	662	gagctcagctcagctcactcattt	179630	-	-	transcortin deficiency (トランスコルチン欠損症)
13364	TTR	NM_000371.1	169	tgagctcagctcagctcagaaag	179642	-	-	steroid binding
DKF26547								
13365	H025	NM_002161.1	445	gttagctcagctcagctcactaaga	179647	-	-	-
13366	FOLR1	NM_000802.2	255	atcttctcactcactatagcttc	179652	-	receptor activity	-
13367	FOLR3	NM_000804.2	762	cagctcagctcagctcactgatttc	179652	-	receptor activity	ovarian cancer (原発性卵巣癌)
13368	FTCD	NM_006657.1	242	cagctcagctcagctcactgatttc	179665	-	-	glutamate formimidyltransferase
13369	GNMT	NM_018960.2	587	aagcaactcactcaataagattga	179673	-	-	glycine N-methyltransferase
13370	SLC19A2	NM_006996.1	1055	caagcagctcagctcactgattga	179709	-	see also 4681 line	-
13371	SLC19A3	NM_025243.2	431	gttccactcagctcactcaataaa	179750	-	see also 8887 line	-
13372	RLBP1	NM_000326.3	1250	agagcagctcagctcagctgattga	179791	-	see also 2715 line	-
13373	SLC5A6	NM_021095.1	1609	tgagcagctcagctcagctgattga	179802	-	-	sodium dependent multivitamin transporter
13374	TFPA	NM_000370.1	557	cagctcagctcagctcagctcattt	179825	-	-	transporter
13375	FRBP3	NM_002013.2	905	agctcagctcagctcagctgatttc	179853	-	see also 1291 line	atherosclerosis (粥状硬化症), ataxial (運動失調)
13376	FRBP4	NM_002014.2	668	ttgcaagctcagctcagctcactcaag	179864	-	-	cyclophilin-type peptidyl-prolyl cis-trans isomerase
13377	FRBP5	NM_004117.2	289	acagcagctcagctcagctcactcaag	179869	-	see also 2782 line	-
13378	FRBP6	NM_003802.2	903	aagagcagcaaccccttaactcaga	179905	-	-	cyclophilin-type peptidyl-prolyl cis-trans isomerase
13379	PPID	NM_005038.1	185	ttgctcagctcagctcagctgattga	179909	-	-	trans isomerase
13380	APOL5	NM_030642.1	81	gttagctcagcaactcactcagcttc	179948	-	-	high-density lipoprotein binding
13381	ANKRA2	NM_023039.2	1302	ctgctcagctcagctcagctcagcttc	179979	-	-	schizophrenia (精神分裂病)
13382	SCARF1	NM_030693.2	845	ttgagctcagctcagctcagctcagcttc	179993	-	receptor activity	-
13383	LAC3	NM_002268.4	1383	ctgctcagctcagctcagctcagcttc	180008	-	-	antigen binding
13384	LIL9A3	NM_006865.2	345	ggagctcagctcagctcagctcagcttc	180013	-	receptor activity	-
13385	SLAMF1	NM_030303.1	207	cagctcagctcagctcagctcagcttc	180016	-	receptor activity	transmembrane receptor
13386	OTC	NM_000531.3	998	cagctcagctcagctcagctcagcttc	180056	-	see also 402 line	rheumatoid arthritis (関節リウマチ)

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15498	PRSS25	NM_022119.2	415	tgagccacacccctgctatcc	182557	-	-	-	trypsin	-
15499	PRSS25	NM_013247.3	1072	caaccctctctgctctatcc	182585	-	see also 5368 line	-	-	-
15500	PRSS7	NM_027772.1	515	ttcaaaccttctctctaga	182607	-	receptor activity	-	trypsin	-
15501	PRSS8	NM_027773.2	375	ctgctcctctgctctctctga	182684	-	-	-	trypsin	-
15502	PRTN3	NM_022777.2	678	tgcatctctcaacgaatgact	182689	-	-	-	hematopoietic-associated factor	Wegener granulomatosis autoantigen(ウェゲナー肉芽腫症自己抗原)
15503	SPUVE	NM_007173.3	1089	ctctgctgctctgctctctgaa	182701	-	-	-	IA complex	-
15504	ST14	NM_021978.2	1169	ctctgctgctctgctctctgaa	182719	-	-	-	trypsin	-
15505	TPMRSS2	NM_008589.2	769	aattgcgcgaactgctgctatct	182734	-	receptor activity	-	trypsin	-
15506	TPMRSS3	NM_024022.1	601	aaggtctactcaacaaagtctgc	182776	-	-	-	trypsin	prostate cancer(前立腺癌)
15507	TPMRSS4	NM_019894.2	912	caagctctcaactgcacaaagcgc	182787	-	receptor activity	-	-	-
15508	TPMRSS5	NM_030770.1	350	atgctctgctgctctgctatctgc	182806	-	-	-	trypsin	-
15509	TPMRSS6	NM_153019.2	922	cgagcgcactgcgaactgctatga	182832	-	-	-	trypsin	-
15510	TPSD1	NM_012271.1	501	aggtctgctctgcaactaatctgc	182832	-	-	-	-	-
15511	TPSP50	NM_013270.2	734	tgccactgactatgcttgaaagc	182839	-	-	-	-	-
15512	Obov43	NM_152786.1	1565	ggagccaaagatgaactctatg	182871	-	-	-	-	-
15513	FLJ10504	NM_018116.2	129	ggccctgcaacgcgaattccaatg	182877	-	-	-	-	-
15514	FURIN	NM_002569.2	514	gttcccaagcgaacgactaaagc	182885	-	see also 1652 line	-	-	-
15515	MBTPS1	NM_003791.1	1504	tgacaactgacgaactctctttag	182934	-	see also 2580 line	-	-	-
15516	PAGE4	NM_002570.2	851	cttgcctctgcaaaagctatctcc	182982	-	-	-	-	-
15517	PCSK1	NM_000439.3	1507	tatctaaatgactcttgaattt	183047	-	see also 348 line	-	-	-
15518	PCSK2	NM_002584.2	890	cagctaaagcgcctctctcttacc	183084	-	see also 1875 line	-	subtilase	-
15519	PCSK5	NM_005200.2	639	cagctaaagcgcctctctcttacc	183099	-	-	-	-	-
15520	PCSK7	NM_004718.2	784	cagctaaagcgcctctctcttacc	183167	-	see also 3237 line	-	-	-
15521	PCSK9	NM_174368.2	861	tgatctaaagcgcctctcttacc	183181	-	see also 10133 line	-	-	-
15522	TNS	NM_022648.2	849	agaagtgactgctgcttctctca	183189	-	-	-	structural molecule	-
15523	TPP2	NM_003291.1	3186	cttcaatgctgcaactctctatca	183317	-	see also 2225 line	-	-	-
15524	APGH	NM_001640.3	1984	aggtcttgctgctgctctctatga	183354	-	-	-	prolyl	-
15525	DPH4	NM_001935.2	858	agactgacaggtgctctctatcc	183387	-	see also 1234 line	-	-	-
15526	FAP	NM_004460.2	1051	tgactcaagtggctgctctatga	183471	-	see also 3010 line	-	-	-
15527	PREP	NM_002726.2	37	ggagccgcctcaacagatgctca	183500	-	-	-	sulfate porter	-
15528	SERPINB2	NM_002576.1	1075	aaggagcaggctcaacttctcaag	183584	-	see also 1656 line	-	-	-
15529	SERPINE1	NM_000602.1	1052	aggtgactgactcaagctcttcca	183589	-	-	-	Proto-oncogene	atherosclerosis(粥状硬化症)
15530	CLPP	NM_008012.1	690	tgagagtgacgcactacataaac	183604	-	-	-	C-JUN	-
15531	WDR11	NM_018117.1	2644	ctgtgctgaactgagataaagctgc	183682	-	see also 7260 line	-	endopeptidase Ctp	-
15532	OLN2	NM_000391.2	1474	ggagagctatctctctgactcaat	183716	-	-	-	tripectidyl-	anauretic idioy(胃内障害自病), ceroid-
15533	DPF7	NM_013378.1	134	tcagacgctctggcacaagacc	183721	-	-	-	peptidase I	lipofuscinosis(レロイド病, フズン蓄積症)
15534	FOLH1	NM_004476.1	776	tgatctgctgctgctgactct	183737	-	-	-	serine-type	-
15535	NAALAD2	NM_005467.2	60	gggctgctgctgctgctgctgct	183740	-	see also 3028 line	-	serine-type	-
						-	-	-	endopeptidase	-

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15536	NAALADL	NM_005468.1	894	tgatctacacccagcaagaccccttc	183803	-	serine-type endopeptidase
15537	P11	NM_006026.2	1176	tgatctctgcgaactatccctgcg	183848	-	see also 4204 line
15538	PRSS16	NM_005865.2	683	tgatctccagcaactatccagc	183855	-	serine-type endopeptidase
15539	RELN	NM_005045.2	847	caatctgcacactatccctgcg	183876	-	see also 3523 line
15540	RHBDL2	NM_017821.2	905	tgatctacacgggttgatctgc	184159	-	serine-type endopeptidase
15541	ADAMTS2	NM_014244.1	871	ctctgcacactatccagactctgc	184164	-	see also 5553 line
15542	PMP-OB	NM_004279.1	1166	tgatctgcactctgtacagtggt	184218	-	mitochondrial processing peptidase
15543	OSGEP	NM_017807.1	501	caatcccaacgctgttctatctga	184232	-	-
15544	OSGEP1	NM_022353.1	1069	ctgtgtgtgtgcgaactaacctc	184277	-	see also 8343 line
15545	IDE	NM_004969.1	2048	aagcatatagcgtctcttaac	184350	-	see also 3451 line
15546	NRO1	NM_002525.1	1578	tgatctatctaacggtatccattg	184412	-	see also 1621 line
15547	RCE1	NM_005133.1	533	ttggtctgcggaacaaagctgatcg	184479	-	prenyl-dependent CAAX protease
15548	ADAM18	NM_014237.1	1080	caatctgcacgactatagatatt	184522	-	metalloendopeptida se
15549	ADAM32	NM_145004.4	728	tgatctcttgatagactatagatt	184579	-	-
15550	ADAM7	NM_00381.1	2122	ttgttgtatgcgaactctctata	184708	-	signal transduction
15551	ADAMTS1	NM_080722.2	917	ttgcctctatgcgtctgatctgc	184725	-	-
15552	ADAMTS1	NM_139054.2	825	tgatctgcacgagctctatatt	184737	-	see also 9648 line
15553	UCP-RC1	NM_003365.1	1193	aggaagctgcgtccactcttaet	184879	-	ubiquinol- cytochrome c reductase
15554	UCP-RC2	NM_003366.1	1107	aagctgcctcaactcaagctaa	184921	-	see also 2271 line
15555	ZMPSTE24	NM_005857.2	790	ctgtctctctgcacactcctgc	184940	-	see also 4072 line
15556	BACE	NM_012104.2	1316	tgatcccaacacactctgtctgc	184966	-	see also 5134 line
15557	BACE2	NM_012105.3	1253	tgatataccctcttgaagaaga	184986	-	-
15558	CTSD	NM_001909.3	199	caaggtctgcgtctcccaagctaa	185003	-	Smad3/Sp-1 heterodimer
15559	INAP1	NM_004851.1	253	tgatctctcttgactactgaag	185013	-	pepsin A
15560	PGC	NM_002430.1	109	aatttgcccttgagaagaattgaag	185018	-	pepsin A
15561	REN	NM_000637.2	1082	caatctgcgaactgtattcttcag	185047	-	renin
15562	FLJ13687	NM_024935.2	1472	ctatgcagctatgcactcttacc	185068	-	hyperproliferinemia(高レニン血症)
15563	FLJ25084	NM_152792.1	959	ggagcaatctcaacaaagcaagag	185112	-	-
15564	MG226605	NM_144662.1	529	atgatgtgtctcaagatctgat	185136	-	-
15565	PSMA2	NM_002781.2	185	ctgtatgatgcgaagtctaa	185152	-	proteasome endopeptidase
15566	PSMA3	NM_002783.2	599	atgactctctctatctctttaa	185178	-	-
15567	PSMA4	NM_002783.3	181	aggtctctatccaaagctgaat	185190	-	see also 1815 line

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15568	PSMA5	NM_002790.2	575	catatgatgtctgcagcaatgg	185229	-	proteasome endopeptidase
15569	PSMA7	NM_002792.2	223	agagagagacatgtctctctg	185232	-	see also 1818 line
15570	PSMB1	NM_002793.2	240	acgcggagagaccacaatgta	185245	-	proteasome endopeptidase
15571	PSMB10	NM_002801.2	406	tgagatcacacagcttatctacg	185268	-	proteasome endopeptidase
15572	PSMB2	NM_002794.3	530	catgtctctgcagcagatctaca	185279	-	proteasome endopeptidase
15573	PSMB3	NM_002795.2	312	aggttcggagatcaaaccttata	185290	-	proteasome endopeptidase
15574	PSMB4	NM_002796.2	266	cgcgaacatctcgcattatgc	185300	-	proteasome endopeptidase
15575	PSMB5	NM_002797.2	611	atgagtcgggctctctctatga	185323	-	proteasome endopeptidase
15576	PSMB7	NM_002799.2	647	gggttcgggaagcaacattgacc	185344	-	-
15577	PSMB8	NM_004159.3	914	catgtatcatcgccttaacttta	185356	-	-
15578	PSMB9	NM_002800.3	431	aaagagctcagatataatgaacc	185365	-	diabases(結核菌)
15579	SENP1	NM_014554.1	1337	aaagattctcctcaacttaca	185406	-	-
15580	AGTPBP1	NM_013239.1	2801	caagacttccagatcttatat	185506	-	see also 6284 line
15581	CPA1	NM_001868.1	568	catgagctctgtgttccaaag	185539	-	carboxypeptidase carboxypeptidase
15582	CPA2	NM_001869.1	333	gaaagcagatgttccactcaat	185539	-	-
15583	CPA3	NM_001870.1	204	atgtgagattcccaattatga	185565	-	see also 1202 line
15584	CPA4	NM_013352.1	725	aaagcggctcccaactctcgg	185624	-	see also 6832 line
15585	CPA5	NM_080385.2	1597	tgagctctccatatactctctca	185647	-	-
15586	CPA6	NM_020361.2	1303	ggagcagcagatataagacc	185702	-	-
15587	CPB1	NM_001871.1	99	aaagctccctcttcaacttga	185709	-	-
15588	CPB2	NM_001872.2	1128	tgagcagatgtgtcatgatt	185770	-	carboxypeptidase
15589	CPD	NM_001304.3	3770	tgagcagatgtgtcatgatt	185910	-	-
15590	CPE	NM_001873.1	1078	tgagcagatgtgtcatgatt	185910	-	see also 889 line
15591	CPN1	NM_001308.1	1017	tgagcagatgtgtcatgatt	185947	-	see also 1203 line
15592	CPO	NM_017307.1	535	ggagcagatgtgtcatgatt	186012	-	protein stabilization episodic endoedema(華岡性血管浮腫)
15593	CPM	NM_019466.2	1335	ggagcagatgtgtcatgatt	186049	-	-
15594	CPZ	NM_003652.1	1368	ggagcagatgtgtcatgatt	186049	-	-
15595	DSOAM1	NM_020893.2	1663	ggagcagatgtgtcatgatt	186067	-	receptor activity
15596	FLJ1347	NM_022827.2	1485	ggagcagatgtgtcatgatt	186134	-	see also 7916 line
15597	FLJ23598	NM_024783.2	1933	ggagcagatgtgtcatgatt	186169	-	-
15598	FLJ32310	NM_152336.1	929	ggagcagatgtgtcatgatt	186226	-	-
15599	LOG11958	NM_198148.1	1295	ggagcagatgtgtcatgatt	186241	-	-
15600	MG20452	NM_153232.2	779	ggagcagatgtgtcatgatt	186275	-	-
15601	TBC1D1	NM_015173.1	1161	ggagcagatgtgtcatgatt	186299	-	see also 6266 line
15602	PGCP	NM_016134.2	1074	ggagcagatgtgtcatgatt	186339	-	-
15603	FLJ14675	NM_032823.3	930	ggagcagatgtgtcatgatt	186372	-	-

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15604	RNPPL1	NM_018226.2	1531	gaagctcgcaacgaactatctac	186411	—	see also 7329 line	transcription, regulat	—
15605	TA2	NM_003184.2	3017	ataccctcgctacactatgaag	186409	—	—	—	—
15606	METAP1	NM_015143.1	827	ataaactcgagccatgattac	186542	—	—	methionyl aminopeptidase	—
15607	METAP2	NM_006838.2	738	atcccgctgcacacacagatta	186558	—	—	methionyl aminopeptidase	—
15608	PA2G4	NM_005191.1	752	gaagtaactaaatatactcgt	186592	—	cell cycle	methionyl aminopeptidase	—
15609	DPEP1	NM_004413.1	377	aggagctccctgctatgatgg	186588	—	—	membrane dipeptidase	—
15610	DPEP2	NM_022355.1	1045	tgctctcctgctgctctcttct	186596	—	—	—	—
15611	DPEP3	NM_022357.1	889	atgcctcctggcaactgataga	186601	—	—	—	—
15612	DNEP	NM_017100.1	1025	gttcctcctgctacactctatga	186613	—	see also 5131 line	—	—
15613	LOC63929	NM_020988.2	210	agatctcaaacacgactatgag	186631	—	see also 8270 line	—	—
15614	XPNP1	NM_020383.2	496	tgacccctgctctctctctaca	186673	—	see also 7859 line	—	—
15615	XPNP2	NM_003393.3	1956	tgagctcctctcgaagatctg	186730	—	—	—	—
15616	ACY1	NM_000666.1	832	ggctgctctgctatatactga	186738	—	—	metallopeptidase	small cell lung cancer(肺癌)
15617	CNT1	NM_032649.4	1166	cgctclagtccctcaactgaag	186771	—	—	—	—
15618	CNT2	NM_018235.1	543	gggaagtgcactgatgtgaag	186794	—	—	—	—
15619	FLJ32569	NM_152491.1	196	gaggaacgctcgatgaagaag	186825	—	—	—	—
15620	PITRM1	NM_014889.1	1240	cagaactgatgaactatgctg	186871	—	—	transcription factor	renal cell carcinoma(腎臓癌)
15621	TMPI	NM_003254.1	365	ccgcacgagagagttctcatg	186908	—	—	ETS	chondrosarcoma(軟骨肉腫), Parkinson disease(パーキンソン病), melanoma(メラノーマ)
15622	DPP10	NM_020868.1	1247	agctctatccctccagctcttgg	186926	—	see also 8010 line	—	—
15623	DPP6	NM_001836.2	1047	cagatctccctccagctcttgg	187007	—	—	—	—
15624	DPP8	NM_017743.3	2249	agatcaacgagcaactatatag	187110	—	—	—	—
15625	DPP9	NM_138159.2	2901	ggctggctcctgctacatgcaat	187176	—	see also 9862 line	—	—
15626	PRCP	NM_005040.2	970	tgcaatgatggactctctctat	187207	—	—	lysosomal pro-X carboxypeptidase	—
15627	PP0B	NM_000308.1	1131	agagctgaactccagatctatga	187244	—	—	vacuolar carboxypeptidase	galactosialidosis(ガラクトシアリドシス)
15628	CPVL	NM_019029.1	688	atfagctcctggatctatccagt	187258	—	—	—	—
15629	RISC	NM_021626.1	857	asgactctccacgctctacatgg	187299	—	see also 8152 line	—	—
15630	CASP10	NM_001230.2	205	aaagtcaactctgattctccagt	187338	—	—	apoptosis	non-Hodgkin lymphoma(非ホジキン淋巴瘤), autoimmune lymphoproliferative syndrome(免疫細胞増殖性症候), gastric cancer(胃癌)
15631	CASP14	NM_012114.1	536	caatcctctcctccgctcttctac	187374	—	—	caspase	Alzheimer disease(アルツハイマー病)
15632	CASP3	NM_004346.2	669	ggatcgtcttgagaactctaatc	187381	—	—	apoptosis	—
15633	CASP4	NM_001225.2	546	ctgactctatgattgatctatga	187407	—	—	apoptosis	—
15634	CASP5	NM_003471.1	347	aaagatcctgctgctctcctcaat	187419	—	—	apoptosis	—
15635	CASP6	NM_001226.2	745	cttaacgctctcagctgactatca	187457	—	see also 808 line	caspase	—
15636	CASP7	NM_001227.2	929	atctactctctctgactacagatc	187480	—	—	—	craniofacial dysostosis(頭蓋面发育不全)

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15637	CASP8	NM_001228.2	479	ctgcttactctctctctctctg	187484	-	see also 807 line	-	-
15638	CASP8	NM_001229.2	1077	cagcttgcacccatctatgttt	187543	-	apoptosis, kinase related	-	-
15639	CELR	NM_003879.3	1389	gagctacacacacacacacac	187588	-	-	-	lupus erythematosus (内臓型エリテマトーデス), Alzheimer disease (アルツハイマー病)
15640	CAPN13	NM_144575.1	1277	gagctacacacacacacacac	187607	-	-	-	-
15641	CAPN5	NM_004055.3	1149	agcagcttgcctcagctctacg	187623	-	see also 2732 line	-	-
15642	CAPN6	NM_012289.2	1700	ctgtctacccagacacacacac	187662	-	see also 5594 line	-	-
15643	CAPN7	NM_012296.1	2454	agcagctacacacacacacac	187754	-	see also 5603 line	-	-
15644	CTSL	NM_001912.2	442	agcagctacacacacacacac	187763	-	-	-	-
15645	CTSL2	NM_001333.2	1116	ctgtctacacacacacacacac	187780	-	-	-	Alzheimer disease (アルツハイマー病)
15646	LGIM	NM_005606.3	733	ctcgcagctacacacacacac	187789	-	-	-	-
15647	PIGK	NM_005482.1	93	cagcttgcctcagctctacacac	187806	-	see also 3813 line	-	-
15648	CTSS	NM_004079.3	335	ctgtctacacacacacacacac	187855	-	see also 2749 line	-	-
15649	CTSH	NM_000396.2	471	cagcttgcctcagctctacacac	187884	-	see also 317 line	-	-
15650	CTSH	NM_004390.2	285	agcagctacacacacacacac	187899	-	-	-	-
15651	CTSH	NM_001908.2	1098	agcagctacacacacacacac	187928	-	-	-	-
15652	BLMH	NM_000368.2	790	atcagacacacacacacacac	187948	-	see also 306 line	-	-
15653	AOP11	NM_170039.1	1139	ctcctacacacacacacacac	187975	-	-	-	-
15654	ARHGEF10	NM_014829.1	5454	ctcctacacacacacacacac	188020	-	-	-	-
15655	CT120	NM_024792.1	383	taactacacacacacacacac	188049	-	-	-	-
15656	CTSC	NM_001814.2	236	gccttccacacacacacacac	188060	-	-	-	-
15657	CTSF	NM_003793.2	1109	atcctactctgcctcacaagat	188116	-	-	-	-
15658	CTSO	NM_001334.2	524	cagctcattcagctctcctctaa	188137	-	-	-	-
15659	CTSW	NM_001335.2	630	ctggagcagctctcctcctctcc	188170	-	-	-	-
15660	CTSZ	NM_001336.2	427	ctggagcagctctcctcctctcc	188173	-	-	-	-
15661	CYLD	NM_012477.1	2057	gagctcagctctcctcctcctcc	188229	-	see also 6290 line	-	-
15662	D13S108E	NM_005800.3	790	tctcacaactcctcctcctcctcc	188284	-	-	-	-
15663	FLJ20558	NM_017880.1	1712	cagacccagctcagctcctcctcc	188412	-	see also 7168 line	-	-
15664	GPR114	NM_153837.1	1003	gactcagctcagctcagctcctcc	188429	-	receptor activity, signal transduction	-	-
15665	GRP58	NM_005313.3	614	cagcagctcagctcagctcctcc	188448	-	-	-	protein disulfide isomerase
15666	KIAA1203	NM_020718.1	1188	ctgagccagctcagctcctcctcc	188505	-	-	-	-
15667	LCN7	NM_022164.1	768	cctcagctcagctcagctcctcc	188536	-	-	-	-
15668	LOC83683	NM_031483.3	526	cagcagctcagctcagctcctcc	188555	-	-	-	-
15669	MGC20741	NM_018561.3	1891	ctgagctcagctcagctcagctcc	188599	-	-	-	-
15670	MGC268117	NM_173824.2	126	atgagctcagctcagctcagctcc	188605	-	see also 7525 line	-	-
15671	PARK2	NM_004562.1	108	tactctcagctcagctcagctcc	188629	-	-	-	Parkinson disease (パーキンソン病)

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15672	USP1	NM_003368.3	709	ctgaataactcgcgaactctg	188661	-	-	ubiquitin-specific protease	-
15673	USP10	NM_005153.1	1502	caactttcttgcgaactatg	188774	-	see also 3615 line	-	-
15674	USP11	NM_004651.2	2213	atcccaagccgaacttgctg	188909	-	see also 3165 line	-	-
15675	USP12	NM_182488.1	707	atgctgtctctactatggaat	188841	-	see also 10263 line	-	-
15676	USP14	NM_005151.2	593	tgccttagcgcgaatactct	188886	-	-	ubiquitin-specific protease	-
15677	USP15	NM_005313.1	2532	agctcttcgcgcataactcga	189028	-	see also 4416 line	-	-
15678	USP16	NM_008447.1	1205	tgccttggaactactatgaga	189070	-	see also 4515 line	-	-
15679	USP18	NM_017144.2	354	ggctctctggagcaaatctctca	189114	-	-	ubiquitin-specific protease	melanoma(メラノーマ)
15680	USP2	NM_004205.3	1448	caatgagatctggagctctcttg	189134	-	see also 2815 line	-	-
15681	USP20	NM_006676.2	259	ggctaccgcgaacaaactatg	189148	-	-	ubiquitin C-terminal hydrolase	-
15682	USP21	NM_012475.2	1142	atgcgcgcgaacaaactatg	189179	-	see also 5349 line	-	-
15683	USP25	NM_013396.2	3579	gcgatttcgcgaactcgttgt	189298	-	see also 5429 line	-	-
15684	USP26	NM_031907.1	679	ttcttcgagctgtgaugccta	189314	-	-	ubiquitin C-terminal hydrolase	-
15685	USP29	NM_020903.1	1517	ttccaagcactaacttctgag	189412	-	-	-	-
15686	USP3	NM_006537.1	1179	ttcttcttgcgagctgtcttct	189468	-	see also 4570 line	-	-
15687	USP30	NM_032266.3	173	cgccctcctcagataaactatg	189477	-	-	-	-
15688	USP31	NM_032266.3	811	cgataatagcgcataactgctg	189520	-	-	-	-
15689	USP33	NM_015017.2	818	gagataagcgtcgaactgaag	189625	-	see also 6166 line	-	-
15690	USP36	NM_025090.2	1043	cgcgaacgctcgcaactttctc	189711	-	-	-	-
15691	USP38	NM_032557.4	1268	ggctctcttcgcgtctcaactg	189809	-	see also 8246 line	-	-
15692	USP4	NM_003363.2	2530	tgccttcctcctcctcaactgct	189933	-	see also 2268 line	-	-
15693	USP44	NM_031471.1	538	agctctctcagcactcactatg	189952	-	-	-	-
15694	USP46	NM_022832.2	83	caaggaaagctctcccaactgaaac	190025	-	see also 8487 line	-	-
15695	USP47	NM_017944.2	1956	agctggctcgaactcaactata	190107	-	see also 7180 line	-	-
15696	USP5	NM_003481.1	805	tgcagctcagctctactactatg	190188	-	-	ubiquitin isopeptidase T	-
15697	USP52	NM_014871.1	1818	gcgcctgcgactctactaatca	190230	-	see also 6067 line	-	-
15698	USP7	NM_003470.1	3087	gaicggagcgtttcgaataagag	190373	-	-	ubiquitin-specific protease	-
15699	USP8	NM_005154.1	3642	tgcgcacacgaactaactcgtgt	190473	-	see also 3617 line	-	-
15700	USP9X	NM_004652.2	3790	ttgctcttcacgcgtactatatt	190527	-	see also 3166 line	-	-
15701	USP9Y	NM_004654.2	3689	caatcacgcgaatgattttatst	190610	-	-	ubiquitin-specific protease	-
15702	BAF1	NM_004656.2	2033	gaicgcgagctgttcaaacataga	190688	-	-	-	-
15703	UCHL1	NM_004181.3	335	tgcgaacactcgaactactcag	190695	-	-	ubiquitin C-terminal hydrolase	Parkinson disease(パーキンソン病)
15704	UCHL3	NM_006002.3	670	gaagcgaactctgaactgaacag	190715	-	see also 4186 line	-	-
15705	UCHL5	NM_015984.1	394	atctctctcagcgaactcgttgt	190728	-	see also 6595 line	-	-
15706	UFD1L	NM_005659.3	245	cagccgacttaactaccctctc	190759	-	see also 3829 line	-	-

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15707	POPEP1	NM 017121.1	370	gaagcaggagctgaagaacttga	190785	pyroglutamyl-peptidase I	-
15708	MG27076	NM 156699.2	2150	ctctgaactctctctgaat	190836	-	see also 9927 line
15709	PRSC2	NM 142204.2	592	ctacagctatatacaactga	190863	-	-
15710	SENP3	NM 013670.2	1200	ggagctctctgaagcttataag	190874	-	-
15711	SENP7	NM 020684.2	419	aaggtataccagagcttatttga	190898	cysteine-type peptidase	-
15712	SUSP1	NM 015571.1	205	aagttaaatctgctgtcgaat	190987	cysteine-type peptidase	-
15713	TINAG	NM 014464.1	5	tgagcagctataaagcttataat	191085	-	see also 5699 line
15714	ABHD5	NM 016006.3	189	tggttgccctactctctataca	191128	-	Chanarin-Dorfman syndrome(ギヤナンドルマ症候群)
15715	GGH	NM 003878.1	229	ctcgtctctgttaagctacttg	191164	gamma-glutamyl hydrolase	-
15716	LOC51185	NM 016302.2	935	caagcagctctgctgaatttga	191204	-	see also 6798 line
15717	RNF127	NM 024778.3	1434	ttgaagctctctctatttga	191236	-	-
15718	C1orf137	NM 023112.2	319	caagcagctctgctctctctacc	191262	-	-
15719	C2orf7	NM 032319.1	179	tgagcagctctgctctctctcca	191274	-	-
15720	C9orf52	NM 152574.1	875	aagattatcaagctctctgaat	191283	-	-
15721	DHH	NM 021044.2	636	tgaccctctgctctctgaactg	191326	-	see also 6076 line
15722	DKFZP566	NM 015528.1	767	tgatctacgtctctgctacactg	191335	-	see also 6451 line
15723	FLJ10613	NM 015067.3	1679	cagccctctgaagctctgaacttg	191369	-	-
15724	FLJ25461	NM 144966.3	172	tgatctctctgaagctctctctcca	191375	-	-
15725	IMP5	NM 175892.1	950	tgctctctctgaagctctctctcca	191418	-	-
15726	KYNU	NM 003937.1	993	aagctctctctgaagctctctcca	191451	-	-
15727	LOC58926	NM 020170.1	347	agagcctctctgaagctctctcca	191471	-	-
15728	MGC10067	NM 143049.1	931	agagcctctctgaagctctctcca	191519	-	-
15729	O1UB1	NM 017670.1	199	tgagcctctctgctctctctcca	191525	-	-
15730	PAGS1	NM 018026.2	2153	ggagctctctgctctctctcca	191558	-	-
15731	RNF128	NM 024539.3	947	atatttttgctctctctctcca	191589	-	see also 8634 line
15732	RNF13	NM 007282.3	1025	tgacactctctgctctctctcca	191620	-	see also 5076 line
15733	RNF130	NM 016434.4	1369	ctgataagctctgctctctctcca	191680	-	see also 7470 line
15734	RNF149	NM 173647.2	575	tgatgtctctgctctctctctcca	191671	-	-
15735	SHH	NM 000183.2	451	ggagctctgaagcagctctctcca	191683	-	-
15736	SPC12	NM 014041.1	270	caggtgagctctctctctctcca	191688	-	see also 5470 line
15737	SPC18	NM 014300.2	500	aagtgaaagctctgctctctcca	191692	-	-
15738	SPPL2A	NM 032602.2	633	tgctgctctctctctctctcca	191710	-	-
15739	SPPL2B	NM 020172.1	417	aagcagctctgctctctctctcca	191754	-	see also 9286 line
15740	SPPL3	NM 139015.3	1281	tgagcctctgaagcagctctctcca	191779	-	-
15741	TFRC	NM 003227.2	1218	gcagctctgctctctctctctcca	191787	-	-
15742	TFRC	NM 003234.1	913	ggagctctgctctctctctctcca	191824	-	receptor activity transferin
15743	WFIKKN	NM 053264.1	691	atctccctctgctctctctctcca	191868	-	see also 2184 line
15744	WFIKKNRP	NM 175575.4	974	tttgaactctgctctctctctcca	191870	-	-

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15774	GN4	NM_004485.2	363	ccggagagatctctctcattc	192353	-	gpcr, signal transduction	gpcr, signal transducer	-
15775	NGT1	NM_021955.1	152	tacgagagatccacgctaaagg	192363	-	gpcr, signal transduction	gpcr, signal transducer	-
15776	NGT2	NM_031498.1	427	gagggccacagcaggagacatccc	192364	-	gpcr, signal transduction	gpcr, signal transducer	-
15777	RGS11	NM_003934.1	451	ctaacgcgcctacacaaagatgc	192374	-	gpcr, signal transduction	gpcr, signal transducer	-
15778	RGS6	NM_004296.3	1245	ccagccacattctccagattcc	192411	-	see also 2877 line	-	-
15779	RGS7	NM_002924.2	1168	aagtcgctacacgtctctctaagt	192442	-	gpcr, signal transduction	regulator of G-protein signaling	-
15780	RGS9	NM_003935.1	1015	aggcgtctgatacaaatatagatgg	192469	-	gpcr, signal transduction	heterotrimeric G-protein GTPase	-
15781	WDRB	NM_019069.2	689	ctgaagcgaatctaatcttggg	192480	-	gpcr, signal transduction	-	-
15782	ARHGAP5	NM_001173.1	2037	ttgctctctgcgccttaagatt	192548	-	see also 744 line	-	-
15783	GTPBP3	NM_032620.1	644	acgttgagccctctatcgattcc	192649	-	-	-	-
15784	MFN1	NM_017927.1	693	ttgctgcgaactctgaaatcaac	192670	-	-	-	-
15785	SAMHD1	NM_015474.2	1814	tttatatgcgcagcagcaatatt	192784	-	signal transduction	-	-
15786	ODC25A	NM_001789.1	1789	gagatgcctctggatgaataaac	192828	-	phosphatase, cell cycle, kinase related	prenylated protein tyrosine phosphatase	-
15787	ODC25B	NM_004358.2	577	caggcaaccacgcgagatctcgg	192831	-	phosphatase, cell cycle, kinase related	-	-
15788	ODC25C	NM_001780.2	1257	tttgcgtatcctatcctatgcttc	192875	-	phosphatase, cell cycle, kinase related	myelodysplastic syndrome (骨髓異形成症候群)	-
15789	DUSP18	NM_153511.2	554	gagcgtctctgcagataaacaaa	192886	-	phosphatase	-	-
15790	DUSP19	NM_060876.2	765	gagcgtctctgcgtatctatcaga	192903	-	see also 9541 line	-	-
15791	MTM1	NM_002922.1	1736	tgagctgcgcgcgagatatacata	192972	-	see also 188 line	-	-
15792	MTM3	NM_021080.2	518	aagtttaattgcgcgagataat	192980	-	see also 8083 line	-	-
15793	PTP4A1	NM_003463.2	1131	aagttccacagctgcagagaac	193055	-	phosphatase	-	-
15794	PTPN1	NM_002827.2	1241	cgcgcacctacgcctcgaagc	193077	-	phosphatase, signal transduction	prenylated protein tyrosine phosphatase	-
15795	PTPN11	NM_002834.3	857	gagcctatcgcgcagctctaaag	193096	-	see also 1854 line	-	-
15796	PTPN12	NM_002935.2	245	cgccagcttaattgaactataa	193141	-	see also 1855 line	-	-
15797	PTPN13	NM_006264.1	5644	ttctacccgcgcatacaataaac	193373	-	see also 4351 line	-	-
15798	PTPN14	NM_005401.3	647	ttctctaaagcggcttctccatg	193433	-	see also 3167 line	-	-
15799	PTPN18	NM_014369.2	444	ctaaagcctctcagagaataga	193493	-	receptor activity, phosphatase	prenylated protein tyrosine phosphatase	-
15800	PTPN2	NM_002828.2	252	ccgcctctctgaattctcgaac	193505	-	receptor activity, phosphatase	-	-

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15801	PTPN21	NM_007039.2	3569	cttttgagccctccatcaatgac	193566	-	see also 4927 line	-
15802	PTPN22	NM_012411.2	264	tgagatctccctcgatcaacct	193695	-	see also 5312 line	-
15803	PTPN3	NM_002829.2	1668	agagatcaaacatgccttcaaca	193714	-	phosphatase	structural molecule
15804	PTPN4	NM_002830.2	1100	ttctatgagccccaacagcta	193743	-	see also 1836 line	-
15805	PTPN5	NM_032781.2	1509	acgaagaatgcacaggtatttg	193849	-	phosphatase	prenylated protein tyrosine phosphatase
15806	PTPN6	NM_002831.3	1276	gttgatctcaagcagctactatgg	193865	-	see also 1850 line	-
15807	PTPN7	NM_002832.2	564	gagcagagatgaatcaatcaatgc	193880	-	phosphatase	-
15808	PTPN9	NM_002833.2	1134	aagtccggagagagatcaacata	193895	-	see also 1851 line	-
15809	PTPRA	NM_002836.2	2451	gtgaacctctctttatctatgg	193945	-	see also 1858 line	-
15810	PTPRB	NM_002837.2	1981	gtgaacattccgtctgaatga	194004	-	see also 1860 line	-
15811	PTPRO	NM_002839.1	899	cagcggaaagcattatcaacc	194229	-	receptor activity, phosphatase, signal transduction	-
15812	PTPRE	NM_006504.3	2033	gatttgatcccaattcaacttc	194410	-	phosphatase	-
15813	PTPRJ	NM_002843.2	1517	gcataaacagctctcatcaaac	194449	-	see also 1868 line	-
15814	PTPRK	NM_002844.2	2208	gttgatgctccacatctatccttt	194590	-	see also 1870 line	-
15815	PTPRM	NM_002845.2	995	cartgattctccagactatbaaa	194684	-	see also 1875 line	-
15816	PTPRN2	NM_002847.2	1202	agagacagatagagactctaac	194780	-	see also 1880 line	-
15817	PTPRO	NM_002848.2	3603	gaagctatccagatctctatgg	194903	-	see also 1882 line	-
15818	PTPRS	NM_002850.2	1582	cagcggacacacactgatttgcg	194918	-	receptor activity, phosphatase	-
15819	PTPRT	NM_007050.3	1200	tatgtgactctcccaatcaatag	194951	-	see also 4834 line	-
15820	PTPRU	NM_005704.2	1370	agcgtgtgcacactatctact	194999	-	receptor activity, phosphatase, signal transduction	-
15821	TPTE	NM_013315.2	1718	atttgattgattgaataactta	195002	-	channel, prenylated protein phosphatase, tyrosine phosphatase, signal transduction	-
15822	PTPRH	NM_002842.1	1951	tgaaacccggagcgtgtgacaat	195042	-	phosphatase	-
15823	PTPRN	NM_002846.2	341	agttgtctccgcacactctgt	195056	-	transmembrane receptor protein phosphatase	-
15824	DUSP1	NM_004417.2	892	aggttcaactccagctacaagcgc	195061	-	receptor activity, phosphatase	diabetes (糖尿病)
15825	ACPP	NM_001089.2	115	ttctctgacccgaagtactatgc	195067	-	see also 2957 line	-
15826	ODC14A	NM_003672.2	1536	tgacctagatgatctctatgg	195147	-	see also 685 line	-
15827	DUSP2	NM_004418.2	794	cagagagccatagcttcaatga	195174	-	phosphatase, cell cycle	Alzheimer disease (アルツハイマー病)
						-	protein phosphatase, tyrosine/threonine phosphatase	-

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15828	DUSP5	NM_004419.2	1029	ctcagctgcctactatagaaga	195185	-	phosphatase, kinase related	protein tyrosine/serine/threonine	-
15829	DUSP6	NM_001946.1	1212	tgcagctgcctactgcctgag	195194	-	phosphatase, kinase related, cell cycle	-	-
15830	DUSP7	NM_001947.1	634	ctcagctgcctgcctcaactctgag	195201	-	-	-	-
15831	EPK2A	NM_003870.2	1188	ctcgcgcctgcctccacatctgga	195227	-	phosphatase	-	myoclonic epilepsies(ミオクローナス癫痫)
15832	MTMR1	NM_003828.1	701	gcgcgcactgcctgcctctctata	195245	-	phosphatase	-	-
15833	MTMR6	NM_004685.2	2087	cgcgcagatcactgcctatctgga	195337	-	see also 3213 line	-	-
15834	PTP9322	NM_152422.3	708	atgcctgcctgcctcactact	195352	-	phosphatase	-	-
15835	PTPLA	NM_014241.2	608	ttgacacactgcctcactact	195408	-	see also 5552 line	-	-
15836	PTPN23	NM_013466.1	945	aagcagcctgcctgcctcactatg	195435	-	phosphatase, signal transduction	-	small cell lung cancer(肺癌)
15837	TENS1	NM_022748.6	1845	cagcgcctgcctatctcactgag	195464	-	phosphatase	-	-
15838	CDKN3	NM_005192.2	632	gcgcttcgcgcacaaattcctgc	195505	-	phosphatase, kinase related, cell cycle	receptor-associated protein	-
15839	DUSP10	NM_007207.3	1498	aagcgcacagcccaactatctcc	195533	-	see also 5013 line	-	-
15840	DUSP14	NM_007026.1	434	ctgcgcacaaattgcctatcttta	195543	-	phosphatase	protein tyrosine/serine/threonine	-
15841	DUSP16	NM_030640.1	879	cagcagcctgccttcctcactatca	195561	-	see also 8917 line	-	-
15842	DUSP4	NM_001394.4	1100	aagcgcacactcctgcacacgctc	195600	-	phosphatase, kinase related, cell cycle	-	-
15843	DUSP9	NM_001395.1	900	cagcagcctgcctgcctctctcc	195604	-	phosphatase, kinase related	protein tyrosine/serine/threonine	-
15844	PPP1R3A	NM_002711.2	1490	actgcgcagctcctcaagatc	195652	-	see also 1765 line	-	-
15845	PPP1R3C	NM_005398.2	647	ctcagctgcacctgcctatctatg	195725	-	phosphatase	-	-
15846	PPP2R1A	NM_014225.3	1454	tgctgcctgcctatctatctatgc	195746	-	phosphatase, apoptosis, cell cycle, transcription regulator	protein tyrosine/serine/threonine	-
15847	PPP2R1B	NM_002716.3	1235	ctcactcctgccttgatcactatc	195777	-	phosphatase, apoptosis, cell cycle, transcription regulator	-	colorectal cancer(大腸癌), lung cancer(肺癌), melanoma(メラノーマ), colorectal cancers(結腸直腸癌)
15848	PPP2R2A	NM_002717.2	1181	cagcagcctgcctgcctatctatgc	195825	-	phosphatase, signal transduction	-	-
15849	PPP1R3D	NM_005424.3	977	tgctgcctgcctcactctctcgc	195848	-	phosphatase	protein tyrosine/serine/threonine	-

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15850	DUSP21	NM_022076.2	293	cggtcaagctgctcaacttgc	195832	-	phosphatase	-
15851	FLJ20442	NM_017823.2	484	catctctccacgcagcaagaata	195867	-	phosphatase	-
15852	MGC1136	NM_024025.1	669	acagctccacacctcttcaactg	195870	-	phosphatase	-
15853	MK-STYX	NM_018086.2	968	ctcgaactccgagagagattgc	195883	-	phosphatase	-
15854	MTMR2	NM_016156.2	638	ctctccacgaattatgattgat	195903	-	protein tyrosine/serine/threonine	-
15855	SSH-3	NM_017657.2	1273	aaagagctccacattcaattgat	195969	-	phosphatase	-
15856	SSH-3	NM_017657.2	1273	aaagagctccacattcaattgat	195979	-	phosphatase	-
15857	SSH-3	NM_017657.2	435	gaagcagcagcaattcaattgag	195999	-	see also 9415 line	-
15858	STYX	NM_032399.2	307	tgctctctgagccattcaattc	196074	-	phosphatase	-
15859	STYX	NM_032399.2	307	tgctctctgagccattcaattc	196074	-	phosphatase	-
15860	CTDP1	NM_003961.3	2875	gaagtcagggagagatgataga	196112	-	see also 2428 line	-
15861	CTDP1	NM_003961.3	1053	caagtcacggagtgatgaattgc	196136	-	phosphatase	-
15862	DNAJG8	NM_004717.1	248	gaagtcagggagtgatgaattgc	196150	-	see also 5971 line	-
15863	ILVBL	NM_022485.2	518	gaagtcagggagtgatgaattgc	196207	-	phosphatase	-
15864	ILVBL	NM_006844.3	315	atggtctcgttctatctccgc	196220	-	phosphatase	-
15865	MTMR8	NM_017677.2	1590	caagcccaagcagatgactaga	196294	-	phosphatase	-
15866	PPAP2A	NM_003711.2	1197	gaagggagagctctcaacaactct	196344	-	see also 2535 line	-
15867	PPAP2C	NM_003712.2	351	tgctcgagctctcaacaactag	196369	-	phosphatase	-
15868	RNGT1	NM_003800.1	810	tgctcgagctctcaacaactag	196386	-	see also 2588 line	-
15869	RNGT1	NM_006511.1	1037	aaagattctgcagctctaaagc	196454	-	phosphatase	-
15870	TRIP	NM_130785.2	1193	tgatttgctgctgattatgata	196473	-	inositol-1, 4, 5-trisphosphate 5-phosphatase protein binding	-
15871	INP5A	NM_005539.2	1105	cgagcaaacgcgcgaagttatg	196489	-	phosphatase	-
15872	INP5B	NM_019892.2	1768	cgagcaaacgcgcgaagttatg	196503	-	phosphatase	-
15873	SKP	NM_018632.2	1265	gaagtcagggagctctaaagct	196524	-	see also 227 line	-
15874	OORL	NM_000276.3	1742	ctgtgagccctctccatt	196594	-	phosphatase, signal transduction	-
15875	IMP2	NM_014214.1	560	gttgagctgagctgattgttc	196593	-	myo-inositol-1, 4, 5-trisphosphate 5-phosphatase	-
15876	INP1	NM_002194.2	758	tgagcccccataagctcaactat	196614	-	phosphatase, signal transduction	-
15877	INP1	NM_003866.1	279	cttccgagctgctaaactgaat	196645	-	phosphatase, signal transduction	-
15878	FLJ20421	NM_017813.1	661	caagctccagcagctgattatgc	196718	-	phosphatase	-
15879	INP1	NM_001567.2	2197	cgagctccagcagctgattatgc	196779	-	phosphatase	-
15880	MINPP1	NM_004897.2	293	cgagctccagcagctgattatgc	196801	-	phosphatase	-
15881	ACP2	NM_001610.1	491	gaagccatgctccctctatgagc	196831	-	add phosphatase	-
15882	ACP2	NM_001611.2	800	gaagccatgctccctctatgagc	196848	-	phosphatase	-
15883	ACP6	NM_016361.2	734	ctatgagctcgaaactctatct	196857	-	phosphatase	-
15884	ACP7	NM_033068.2	961	cttgagatctccgccaagcagcgc	196874	-	phosphatase	-

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15885	FLU20371	NM_017768.3	643	caatctctdgcactcaactctt	196884	-	see also 7149 line		
15886	FLU23751	NM_152282.1	211	ccgtctctgcctcagaactg	196934	-	phosphatase	-	
15887	KIAA0377	NM_014659.1	2609	acgttcacacgtctctcttctt	196995	-	see also 5823 line		
15888	KIAA0433	NM_013216.1	2612	ccgtctctgcctcagaactg	197060	-	see also 6279 line		
15889	FBP1	NM_000507.2	576	atgctctctcaccctcgtatgc	197123	-	phosphatase	fructose- bisphosphatase	diabetes mellitus(糖尿病), lactacidemia(乳酸血症), diabetes(糖尿病)
15890	FBP2	NM_003987.2	321	tgctcaccactctctatgatac	197134	-	phosphatase	fructose- bisphosphatase	
15891	GSPC	NM_000151.1	112	tggtctctcagctcaacactaac	197144	-	phosphatase	fructose- bisphosphatase	
15892	NT5G1A	NM_035328.1	693	ccgtctctgcctcgtgagagc	197173	-	phosphatase	glucose-6- phosphatase	atherosclerosis(粥状硬化症), glycogen storage disease(グリコーゲン蓄積症)
15893	NT5G1B	NM_035283.1	1020	aatttgagtgctgcgtctataac	197185	-	-	-	-
15894	NT5G2	NM_012229.2	1711	ccgtctcaccagctcgaattatga	197246	-	-	IMP-GMP specific 5'-nucleotidase	-
15895	NT5E	NM_003556.1	1397	ctgcagctgcgtgcgaactcactg	197286	-	see also 1828 line	-	-
15896	NT5M	NM_002021.2	647	atgctcttgctgcgaactcactt	197300	-	-	-	-
15897	GPLD1	NM_001503.2	538	agacacacttgagctctatgcttt	197312	-	see also 1032 line	-	-
15898	PLD1	NM_002662.1	2301	ggctcttcactctcaactgata	197434	-	signal transduction	phospholipase D	-
15899	PLD2	NM_002663.2	1652	tgacacagctcttcgaagatttc	197485	-	see also 1743 line	-	-
15900	PLD3	NM_017268.1	1473	ctgcctctctgtgcacacatacc	197517	-	see also 5246 line	-	-
15901	BP-GM	NM_001724.3	650	ctgcacacgctgcgaagcttaaa	197533	-	phosphatase	bisphosphoglycerate phosphatase	hemolytic anemia(溶血性貧血)
15902	PGAM2	NM_000290.1	669	acggagatccacctctgtatga	197553	-	phosphatase	phosphoglycerate mutase	myopathy(ミオパシー)
15903	PONI	NM_000446.3	154	gaggtacacacctgaactctcc	197566	-	see also 351 line	-	-
15904	PON2	NM_000305.1	319	ggccgcagggtaataagatcact	197598	-	phosphatase	arylesterase	atherosclerosis(粥状硬化症), coronary artery disease(冠動脈疾患), diabetes mellitus(糖尿病), elevated fasting plasma glucose in NIDDM(インスリン非依存型糖尿病), diabetes(糖尿病)
15905	PON3	NM_000840.1	55	ggatctctctgcctctcttgaga	197614	-	-	-	-
15906	PP1A	NM_014172.2	829	ctgcacacgctgcattcactcact	197647	-	phosphatase	-	-
15907	PDE5A	NM_000440.1	948	atgtgcctctctgaagactgctt	197656	-	see also 348 line	-	-
15908	PDE5B	NM_000283.1	1087	atctctcctctgcgaactatgcttc	197699	-	signal transduction	cGMP-specific phosphodiesterase	congenital stationary night blindness(先天性夜 盲症), retinitis pigmentosa(色素性網膜炎)
15909	PDE5C	NM_006204.2	2128	ttgttgagctgcgtcactatcactg	197764	-	see also 4302 line	-	-
15910	PDE5G	NM_002602.1	335	ctgcagctgcctgcacctatgctg	197779	-	-	enzyme inhibitor	-
15911	PDE5H	NM_006205.1	168	ggagcagactgcgtcccaactcaaga	197780	-	-	enzyme inhibitor	-
15912	PDE4A	NM_006202.1	1446	gcgcagactgcgtgcgaactcaatca	197800	-	signal transduction	cAMP-specific phosphodiesterase	-
15913	PDE4B	NM_002600.2	373	ttgaacacgctcccaagatgc	197817	-	see also 1680 line	-	-
15914	PDE4C	NM_000923.1	1445	caagcagctgcctatgtgcaac	197863	-	signal transduction	cAMP-specific phosphodiesterase	-
15915	PDE4D	NM_006203.2	418	caatctgcagctgcgtgcgaacaa	197875	-	see also 4289 line	-	-
15916	PDE7A	NM_002603.1	421	caagcattatttgactctcacg	197930	-	see also 1682 line	-	-

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15917	PDE1C	NM_005020.1	715	gtgagatcatgactgaattt	197990	-	see also 3511 line	-
15918	PDE3A	NM_009821.2	2563	caaggatctctataaagatgc	198077	-	see also 559 line	-
15919	PDE2A	NM_002589.1	478	aattcagcagagatctatctcc	198091	-	cGMP-stimulated cyclic-nucleotide phosphodiesterase	-
15920	PDE11A	NM_018553.2	2392	agagcagcagatcttcagc	198107	-	signal transduction signal transduction	-
15921	PDE6D	NM_002801.1	551	ttacagcagatctcttcagc	198179	-	3', 5'-cyclic- nucleotide phosphodiesterase	-
15922	GNP	NM_031133.3	935	gaggagctagctbaacagatgt	198185	-	2, 3'-cyclic nucleotide 3'- phosphodiesterase	-
15923	PLOB1	NM_015192.2	760	caagcagatctcgctctaatga	198215	-	see also 6273 line	-
15924	PLOB2	NM_004573.1	1428	gagatttccgcagcagctcttgg	198288	-	1= phosphatidylinosito l-4, 5- bisphosphate phosphodiesterase	-
15925	PLOB3	NM_009932.1	1045	atttaccaccagcactactatg	198324	-	1= phosphatidylinosito l-4, 5- bisphosphate phosphodiesterase	-
15926	PLCB4	NM_009933.2	340	tcgttgagcagcctaccacaagg	198340	-	see also 606 line	-
15927	PLCB4	NM_016341.2	4418	caactaacctctatctactatta	198543	-	see also 6825 line	-
15928	PLC1	NM_008226.1	2335	caactcaactacagctactactt	198684	-	lung carcinoma(肺癌)	-
15929	PLC1	NM_015184.2	1273	ttccagagctcttaactgaatg	198737	-	-	-
15930	PL11323	NM_018390.1	797	tctctccctctatcagcagctcc	198784	-	-	-
15931	FL131578	NM_153268.1	1264	aattgcagcagcagcagctcc	198784	-	-	-
15932	PL17451	NM_193569.1	642	agcagcagcagcagcagctcc	198820	-	-	-
15933	KAM1434	NM_019563.2	800	caagcagcagcagcagcagctcc	198847	-	see also 7721 line	-
15934	MGC41771	NM_024307.1	785	gagcagcagcagcagcagctcc	198909	-	see also 8965 line	-
15935	MIR16	NM_016844.3	487	ctgtcttaactgaagcagcagctcc	198923	-	see also 7122 line	-
15936	OBDFP	NM_017171.2	839	tgagttctctctgctactact	198965	-	see also 8888 line	-
15937	PPI1665	NM_030792.4	1640	caagctgctctgagcagcagctcc	199001	-	see also 7539 line	-
15938	SMPD3	NM_018667.1	1514	actctgctctgagcagcagctcc	199053	-	see also 7400 line	-
15939	TDP1	NM_018319.2	2043	cgatagcagcagcagcagctcc	199053	-	see also 8888 line	-
15940	LENG5	NM_024075.1	715	tgcttactactctctgagcagctcc	199069	-	see also 6198 line	-
15941	MGC2776	NM_025265.2	1400	agcgcgcagcagcagcagctcc	199164	-	ribonuclease P	-
15942	POPI	NM_015029.1	2101	agcgcgcagcagcagcagctcc	199177	-	ribonuclease P	-
15943	RNASEP1	NM_006638.1	93	ttgtatgactactactactact	199194	-	ribonuclease P	-
15944	RPP20	NM_005837.1	361	actctactgactactactact	199206	-	ribonuclease P	-
15945	RPP30	NM_006413.2	658	gtgatttactgctactactact	199206	-	ribonuclease P	-

15946	RPP38	NM 006414.1	179	ttgagcagccttaagctt	199219	-	-	structural constituent of ribosome	-
15947	DLAD	NM 021233.2	1066	agattatctcttaattgaa	199274	-	-	-	-
15948	APX2	NM 01449.1	752	atctatgacctctctgagc	199287	-	-	-	-
15949	ElaA-RP1	NM 020655.2	551	ctggagcagcagcctctgagc	199340	-	-	-	-
15950	FL112484	NM 027577.2	837	cagcagcagcagcctctgagc	199351	-	-	-	-
15951	PLJ12671	NM 003960.1	854	tgctctgagcagcagcctctgagc	199365	-	-	-	-
15952	ISJ20	NM 002020.1	552	agcagcagcagcagcctctgagc	199377	-	-	-	-
15953	MGC16843	NM 080663.1	689	ttgagcagcagcagcagcctctgagc	199397	-	-	-	-
15954	DFFA	NM 004401.1	91	ctctgagcagcagcagcagcctctgagc	199404	-	-	-	-
15955	OFFB	NM 004402.1	897	ttgagcagcagcagcagcagcagc	199428	-	-	-	-
15956	KIAA0218	NM 014780.1	1634	ctctgagcagcagcagcagcagc	199446	-	-	-	-
15957	PLA2G13	NM 032562.1	230	cagtcagcagcagcagcagcagc	199470	-	-	-	-
15958	PLA2G4A	NM 024420.1	1226	tgctctgagcagcagcagcagc	199504	-	-	-	-
15959	PLA2G6	NM 003560.1	366	agctcagcagcagcagcagcagc	199539	-	-	-	-
15960	PRDX6	NM 004905.2	250	agctcagcagcagcagcagcagc	199564	-	-	-	-
15961	CLC	NM 001828.4	148	gcagcagcagcagcagcagcagc	199573	-	-	-	-
15962	LYPLA1	NM 006330.2	818	ctctctgagcagcagcagcagc	199596	-	-	-	-
15963	PLA1A	NM 015900.1	356	ctctctcagcagcagcagcagc	199624	-	-	-	-
15964	PLA2G4B	NM 005090.1	432	ctctcagcagcagcagcagcagc	199625	-	-	-	-
15965	PLA2G4D	NM 003706.1	617	ctctcagcagcagcagcagcagc	199647	-	-	-	-
15966	G11orf11	NM 001333.1	1628	agctcagcagcagcagcagcagc	199673	-	-	-	-
15967	LOC22195	NM 139179.1	1655	gtctctgagcagcagcagcagc	199710	-	-	-	-
15968	PNLIP	NM 000936.1	469	cagtcagcagcagcagcagcagc	199727	-	-	-	-
15969	PNLIPRP1	NM 006229.1	277	cagtcagcagcagcagcagcagc	199756	-	-	-	-
15970	PNLIPRP2	NM 005396.3	1200	agctcagcagcagcagcagcagc	199794	-	-	-	-
15971	AOAH	NM 001637.1	563	ctctctgagcagcagcagcagc	199804	-	-	-	-
15972	APO2	NM 000483.3	293	ctctcagcagcagcagcagcagc	199839	-	-	-	-
15973	LIPA	NM 000235.1	1086	agctcagcagcagcagcagcagc	199865	-	-	-	-
15974	ACH-1	NM 000665.2	1616	atctctgagcagcagcagcagc	199880	-	-	-	-
15975	BCH-1	NM 000055.1	964	cagtcagcagcagcagcagcagc	199916	-	-	-	-
15976	CACH-1	NM 130767.1	848	gcagcagcagcagcagcagcagc	199964	-	-	-	-
15977	OEL	NM 001807.2	372	gcagcagcagcagcagcagcagc	199991	-	-	-	-
15978	CES1	NM 001266.3	1132	tgctctgagcagcagcagcagc	199999	-	-	-	-
15979	CES2	NM 003669.4	2424	tgctctgagcagcagcagcagc	200019	-	-	-	-

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15980	NTE	NM_001984.1	325	ctctattgctctcaagtgtaac	2002028	-	-	-	-
15981	ESD	NM_006702.2	2536	cagagctactctctaacatgga	2000588	-	-	-	-
15982	PTEI	NM_005469.2	528	ttgcgcctcacagctgtctctac	2000882	-	-	-	serine esterase
15983	THEA	NM_015547.2	823	cgagctgcctgcctgtctctctc	2000888	-	-	-	-
15984	ZAP128	NM_008821.3	252	cgagctgcctgcctgtctctctc	2000905	-	-	-	see also 6461 line
15985	PAFAH1B1	NM_000430.2	1266	acgtctgacgcgcacatcagc	200131	-	-	-	see also 336 line
15986	PAFAH1B2	NM_002572.1	451	ggatcagagccttgatgaact	200185	-	-	-	see also 1654 line
15987	PAFAH1B3	NM_002573.2	817	cagcctcatcctgcacatgatatt	200167	-	-	-	2-acetyl-1-alkylglycerophosphocholine esterase
15988	H8PD	NM_004285.1	1370	ggctcactctcgatctgtgtca	200186	-	-	-	glucose-6-phosphate 1-dehydrogenase
15989	PGLS	NM_012088.1	763	cgtgtccctctcgaagaacattcc	200197	-	-	-	9-phosphogluconate
15990	HIECH	NM_014382.2	211	aaggttgcacggagactcaaca	2002023	-	-	-	tonase
15991	PPT1	NM_000310.1	729	taattctcgtgactgtttzgttt	200248	-	-	-	polioinoyl-protein hydrolase
15992	PPT2	NM_005155.5	998	atcagacagacggactactgaag	200254	-	-	-	see also 3622 line
15993	HAGH	NM_005326.3	638	gagaacacagagctgaaactga	200267	-	-	-	hydroxyacylglycylcholine hydrolase
15994	ARSB	NM_000046.2	1780	cccctcagctatttactctact	200282	-	-	-	arylsulfatase
15995	ARSD	NM_001669.1	572	ctaacacacagctgtttctcttt	200320	-	-	-	arylsulfatase
15996	ARSE	NM_000047.1	874	aagacagacacccctctctctc	200349	-	-	-	chondrolysin
15997	ARSF	NM_004042.3	872	agagcttgatcctatctgttga	200381	-	-	-	chondrolysin
15998	GALNS	NM_000512.2	1519	gtccactcgtgcgtctatgaat	200414	-	-	-	acetylgalactosaminase
15999	S1S	NM_000351.2	288	aagctatgaagccgagactcatt	200416	-	-	-	styryl-sulfatase
16000	IDS	NM_002029.2	1152	aagcctgcagacgcttaaacatc	200479	-	-	-	see also 160 line
16001	GNS	NM_002076.1	1229	ttctgtctacgactcaatgaag	200527	-	-	-	see also 1340 line
16002	DKFZ6313	NM_198150.1	589	caagcccatctgttactctatctc	200585	-	-	-	-
16003	KIAA11001	NM_014960.1	842	gggttactcttactctggatgaag	200601	-	-	-	-
16004	SGSH	NM_000199.2	118	ttgagctgagcgtctacacac	200614	-	-	-	see also 159 line
16005	SULF1	NM_015170.1	3001	ctactctcctcagctctctctc	200673	-	-	-	see also 8263 line
16006	SULF2	NM_018837.2	1250	ttacacacagctctctctctc	200696	-	-	-	-
16007	C14orf126	NM_080664.1	253	atcagacagctctctctctctc	200718	-	-	-	-
16008	FLJ11106	NM_018324.1	1068	ttatctctcgtcagcagagaattc	200759	-	-	-	-
16009	HARS2	NM_080820.3	492	caagccagcgtctcactgaattc	200777	-	-	-	-
16010	HYAL2	NM_003713.2	889	cagcctcagctcagcactctga	200789	-	-	-	receptor activity
16011	HYAL3	NM_003649.2	888	ttgctcagctcagcagactctga	200798	-	-	-	-
16012	SPAM1	NM_003111.3	884	ttgctcagctcactctactgatt	200881	-	-	-	-

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16013	HEXA	NM_005520.2	1104	ctgagcaatgctctctctctgagg	200925	-	beta-N-acetylhexosaminidase	GM2 gangliosidosis (GM2 ガングリオシドシス)
16014	HEXB	NM_005521.2	1681	atgtctgagcagcagcagcagcgc	200974	-	beta-N-acetylhexosaminidase	GM2 gangliosidosis (GM2 ガングリオシドシス), motor neuron disease (運動ニューロン疾患), juvenile spinal muscular atrophy (若年性脊髄性)
16015	NAGPA	NM_012256.1	602	gggtctgtgtgtgtgtgtgtgtgt	200976	-	-	-
16016	NAGLU	NM_002633.2	1888	cttctctgtgtgtgtgtgtgtgtgt	200994	-	-	-
				see also 206 line			-	-
16017	NAGA	NM_000282.1	1102	ctgtgtgtgtgtgtgtgtgtgtgtgt	201009	-	alpha-N-acetylglucosaminidase	alpha-galactosidase deficiency (アルファガラクトシダーゼ欠損症)
16018	MAN2A1	NM_002372.1	1356	tgtgtgtgtgtgtgtgtgtgtgtgt	201042	-	-	-
				see also 1525 line			-	-
16019	MAN2A2	NM_006122.1	1941	gtgtgtgtgtgtgtgtgtgtgtgtgt	201155	-	mannosyl-oligosaccharide 1, 3-1, 6-alpha-mannosidase	-
16020	MAN2B1	NM_000528.1	2233	tgtgtgtgtgtgtgtgtgtgtgtgt	201200	-	-	-
16021	MAN2C1	NM_006715.1	2556	catgtgtgtgtgtgtgtgtgtgtgtgt	201228	-	-	-
16022	MAN2A	NM_005908.2	2004	ctgtgtgtgtgtgtgtgtgtgtgtgt	201295	-	-	-
16023	GAA	NM_000152.2	1195	ctgtgtgtgtgtgtgtgtgtgtgtgt	201311	-	beta-mannosidase	mannosidosis (マンノシドシス)
				see also 1525 line			-	-
16024	MGAM	NM_004668.1	4171	gtgtgtgtgtgtgtgtgtgtgtgtgt	201411	-	alpha-glucosidase	glycogen storage disease (グリコーゲン蓄積症)
16025	SI	NM_001041.1	5410	atgtgtgtgtgtgtgtgtgtgtgtgt	201607	-	Hepatoerythroid nuclear factor 1	-
				see also 1525 line			-	-
16026	GCS1	NM_006302.1	958	atgtgtgtgtgtgtgtgtgtgtgtgt	201619	-	mannosyl-oligosaccharide glucosidase	glucosidase I deficiency (グルコシダーゼI欠損症)
16027	AGL	NM_000028.1	3812	ctgtgtgtgtgtgtgtgtgtgtgtgt	201738	-	-	-
16028	KIAA1128	NM_018999.1	1076	atgtgtgtgtgtgtgtgtgtgtgtgt	201783	-	-	-
16029	NEU1	NM_000434.2	724	tgtgtgtgtgtgtgtgtgtgtgtgt	201831	-	-	-
16030	NEU2	NM_005383.1	1070	atgtgtgtgtgtgtgtgtgtgtgtgt	201843	-	exo-alpha-glucosidase	glucosidase I deficiency (グルコシダーゼI欠損症)
16031	NEU3	NM_006856.4	2043	gggtgtgtgtgtgtgtgtgtgtgtgt	201865	-	exo-alpha-glucosidase	glucosidase I deficiency (グルコシダーゼI欠損症)
16032	FLJ90231	NM_173361.1	328	gggtgtgtgtgtgtgtgtgtgtgtgt	201877	-	-	-
16033	GLB1	NM_000404.1	583	caaaatgtgtgtgtgtgtgtgtgtgt	201884	-	-	-
16034	LOC11293	NM_138416.1	1043	atgtgtgtgtgtgtgtgtgtgtgtgt	201937	-	beta-galactosidase	GM1 gangliosidosis (GM1 ガングリオシドシス), mucopolysaccharidosis (ムコ多糖体症)
16035	LOC289944	NM_138342.2	712	aaatgtgtgtgtgtgtgtgtgtgtgt	201943	-	-	-
16036	GLA	NM_000169.1	406	gggtgtgtgtgtgtgtgtgtgtgtgt	201964	-	-	-
16037	GBE1	NM_000158.1	928	aaatgtgtgtgtgtgtgtgtgtgtgt	202010	-	-	-
16038	SLC3A1	NM_000341.2	1439	ctgtgtgtgtgtgtgtgtgtgtgtgt	202100	-	-	-
				see also 133 line			-	-
16039	SLC3A2	NM_002394.3	1204	caatgtgtgtgtgtgtgtgtgtgtgt	202132	-	cystine transporter AP-1 (c-Jun homodimer)	cystinuria (システチン尿症)

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[illegible]

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16068	AGA	NM_000027.2	398	gggtgcacgggaagactctg	203277		N4-(beta-N-acetylglucosaminyl)-L-asparaginase
16069	ASGL1	NM_025080.2	836	cggaactctctgggtctctatc	203313	-	
16070	C20orf13	NM_017714.1	644	aggtctcgtcgtcgaatctcc	203327	-	
16071	ASPA	NM_000049.1	672	aaatctcgtcgggtctctgaag	203358	-	see also 7123 line
16072	GA	NM_013267.2	1244	atgcctcgtctctctctcgaag	203389	-	see also 717 line
16073	GLS	NM_014905.2	1971	cgccggacactctctctagaac	203454	-	glutaminase
16074	FLJ31204	NM_174912.2	1118	tgtgttctcctctgaacactt	203479	-	glutaminase
16075	ORSL1	NM_018292.2	1299	gttagcgcctctctctctctga	203526	-	enzyme
16076	UPB1	NM_016327.1	735	cggaagctcgtctgaacattt	203543	-	
16077	VNN3	NM_018399.2	337	gaactcttcacctctctctgag	203557	-	see also 7446 line
16078	ADA	NM_000022.1	1031	acgggaactcggctctctctgag	203590	-	Immunodeficiency (免疫不全症)
16079	AMPD1	NM_000036.1	722	ctcttaattctctctctctcaat	203611	-	exercise-related myopathy (アテニル筋脱アミ)
16080	AMPD2	NM_004037.5	855	ccctatgtccctctctctctctcc	203657	-	肝葉欠損症, myoadenylate deaminase
16081	AMPD3	NM_000480.1	2213	gaatccggtattctcaatctctct	203703	-	deficiency (アデニンデアミンナーゼ欠損症)
16082	ATIC	NM_004044.4	1205	atgattctctcgaacagtctta	203746	-	
16083	GCHI	NM_000161.1	492	atctctctcaacagctctctctttt	203788	-	dystonia
16084	DDAH1	NM_012137.2	652	tcctcaattgctctctctctctct	203788	-	phenylketonuria (フェニルケトン症), Segawa syndrome (セガワ症候群), Parkinson disease (パーキンソン病)
16085	DDAH2	NM_013974.1	606	gggtctcgtcgtctctctctctct	203788	-	
16086	CRMP1	NM_001313.2	405	atgattctctcgaagctctctctga	203802	-	dimethylargininase
16087	DPYS	NM_001385.1	1187	aaagtcggatctcctctctctctct	203839	-	dihydropyrimidinas
16088	DPYSL3	NM_001387.1	1523	caagcctctctctctctctctctct	203895	-	dihydropyrimidinas
16089	IGSF2	NM_004258.1	2331	ctctctctcgtctctctctctctct	203932	-	see also 954 line
16090	MG33366	NM_152435.1	1319	ctctctcgtctctctctctctctct	203940	-	signal transduction
16091	NIT1	NM_005600.1	735	caagatctctctctctctctctctca	203967	-	
16092	BTD	NM_000060.1	655	ttagcgtctctctctctctctctctca	203979	-	see also 3892 line
16093	NIT2	NM_020202.2	577	aggtctcgaactctctctctctct	204012	-	see also 35 line
16094	VNN1	NM_004668.1	1179	ctctcaagctctctctctctctctca	204036	-	hydrolase, acting on carbon-nitrogen bonds (but not peptide)
16095	VNN2	NM_004665.2	223	aggtctcgaactctctctctctct	204037	-	
16096	ABHD6	NM_020676.3	913	aggtctcgaactctctctctctct	204107	-	
16097	ABHD7	NM_173667.2	543	tgattctctctctctctctctctca	204121	-	see also 7915 line

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1608B	ABHD8	NM_024527.2	201	gggtttatccagagctatctct	204140	-	-	-	-
1609B	ABHD8	NM_024794.1	810	atctcttgcacacacacacac	204152	-	-	-	-
16100	EPHX1	NM_001120.2	1071	caactcttgcacacacacac	204132	-	-	-	epoxide hydrolase
16101	EPHX2	NM_001976.3	284	ttctcttgcacacacacacac	204185	-	-	-	epoxide hydrolase
16102	MEST	NM_002402.2	706	ttctcttgcacacacacacac	204226	-	-	-	-
16103	AHCY	NM_000887.1	1021	ttgacgcgtatcgttgcagat	204243	-	-	-	adenosylhomocyst enase
16104	AHCYL1	NM_006827.3	1465	aatctgatctgcatacacttc	204272	-	-	-	-
16105	KIAA0828	NM_015328.1	527	caagcgcctctatcagatgac	204296	-	-	-	see also 4682 line
16106	FAH	NM_001137.1	978	atagccagcgcgtacacatg	204340	-	-	-	see also 6366 line
16107	GPAA1	NM_003801.2	612	caagatttttgcacaaagat	204346	-	-	-	tyrosinemia(チロシン血症)
16108	AADAC	NM_001086.1	116	gttgagctctctatgacatata	204352	-	-	-	fumarylacetacetate
16109	ABHD1	NM_032604.2	1003	cgctacacacgcgcgttgcag	204400	-	-	-	carboxylic ester hydrolase
16110	ABHD4	NM_022060.1	933	ggctgcacacacacacacac	204417	-	-	-	-
16111	ACAT2	NM_012332.1	819	gaagccacacacacacacac	204445	-	-	-	-
16112	ADPRHL1	NM_138430.3	306	ctatctctgcgtatgactctaac	204464	-	-	-	-
16113	ADPRHL2	NM_017825.1	847	cgctacacacacacacacac	204478	-	-	-	-
16114	ASAH	NM_014435.1	577	ttgcctatctgcgtatgactgac	204488	-	-	-	-
16115	ATP5C1	NM_005174.1	674	atgagatctctgcagatattga	204505	-	-	-	hydrogen- transporting two- sector ATPase
16116	ATP5D	NM_001687.3	370	agagcgcacacacacacacac	204516	-	-	-	hydrogen- transporting two- sector ATPase
16117	ATP5O	NM_001697.1	595	gtcgcgctctgcagatgactg	204531	-	-	-	hydrogen- transporting two- sector ATPase
16118	ATP6A2	NM_005765.2	146	ttggagcagcttgcattatatta	204540	-	-	-	-
16119	ATP6V0B	NM_004047.2	670	ggagctctgcgcacactctcca	204578	-	-	-	hydrogen- transporting two- sector ATPase
16120	ATP6V0D1	NM_004891.3	244	ctgcagagcagctgattatgtaa	204580	-	-	-	hydrogen- transporting two- sector ATPase
16121	ATP6V1D	NM_015994.2	715	ttgacgctatctctgcttatata	204588	-	-	-	hydrogen- transporting two- sector ATPase
16122	ATP6V1G1	NM_004888.2	357	cgcgcagacacagctgactct	204607	-	-	-	hydrogen- transporting two- sector ATPase
16123	ATP6V1G2	NM_130463.2	435	caagcgcagcagcagcagcagc	204613	-	-	-	-
16124	ATP6V1G3	NM_133262.2	361	ttgacacacacacacacacac	204623	-	-	-	-
16125	BPHL	NM_004332.1	582	ggagcagacacacacacacac	204630	-	-	-	-

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16126	G11or18	NM_001584.1	191	aggctacacgacacacacac	204644	-	-	hydrolase	-
16127	C20or147	NM_152667.1	563	ctgtatctgtctgacactatga	204686	-	-	phosphatase	-
16128	C22or1	NM_001585.2	970	gaagcaacacactatgaatgc	204685	-	-	-	-
16129	CH13.1	NM_001276.1	468	gattccagcagcttcatcaat	204700	-	-	hydrolase	rhumatoid arthritis(関節リウマチ)
16130	CH13.2	NM_004000.1	732	gaagcaacgcttcatcaatgt	204728	-	-	hydrolase	-
16131	DBR1	NM_018216.1	977	gactccagcttcatcaatgt	204760	-	-	-	-
16132	D103	NM_001362.1	337	gttatccagacgattctctgc	204778	-	-	thyroxine	-
16133	DKFZP564	NM_032124.3	809	ggaaatctgagctcagaatga	204790	-	-	-	-
16134	O243	NM_015407.3	470	tgggaactgcacactcamaag	204793	-	-	-	-
16135	DPTS.4	NM_008426.1	1287	tctctgcgtgacccttcaactat	204796	-	-	see also 4499 line	-
16136	DPTS.5	NM_020134.2	896	tgtccaaagcttccatctatctgc	204818	-	-	-	-
16137	ENPP4	NM_014936.1	1262	cagagacatctgcgattctatc	204861	-	-	see also 6119 line	-
16138	ENPP5	NM_021572.4	1216	agagcaacagcttgcgataatg	204904	-	-	-	-
16139	ENPP6	NM_153343.2	1197	agatcggtgactctacaatgt	204952	-	-	-	-
16140	EYA1	NM_000503.3	807	cagccgcgcggtctttaaacaat	204980	-	-	see also 380 line	-
16141	EYA2	NM_005244.3	363	cagcagcttaccctctctacagc	205003	-	-	phosphatase, transcription regulator	-
16142	EYA3	NM_001990.2	1156	aggagcccaacagctagtcatgtg	205046	-	-	see also 1273 line	-
16143	EYA4	NM_004100.2	1596	ctctccacaggtctctatcacaa	205086	-	-	see also 2769 line	-
16144	FAM16AX	NM_012080.1	343	cgcgctctgtctgattgaagaca	205122	-	-	-	-
16145	FLJ11151	NM_018340.1	1008	agcgtctatgatttgaatcaag	205132	-	-	-	-
16146	FLJ11342	NM_018394.1	646	aggaattatcaacttcaatcaaa	205182	-	-	-	-
16147	FLJ21736	NM_024922.3	489	cagctgaacgctctctatctatg	205176	-	-	-	-
16148	FLJ31547	NM_145024.1	379	ctcatctcccttgaataactgtg	205196	-	-	hydrolase	-
16149	GNPDA1	NM_005471.2	785	agtttgatctgcgttcttctgtg	205225	-	-	-	-
16150	KIAA1363	NM_020782.1	868	tatgcagagcaagctgctatcac	205251	-	-	see also 7970 line	-
16151	LPPP	NM_023126.2	520	tgcgtctgtctctctctatgagag	205270	-	-	-	-
16152	LOC13414	NM_158808.2	245	agctgaacagactatctctctgtg	205275	-	-	-	-
16153	LOC33932	NM_178545.2	788	tgggttgcctgtgattatccaca	205284	-	-	-	-
16154	MASA	NM_021204.1	493	agtcctctgctgattatctctgc	205305	-	-	-	-
16155	MGC12904	NM_031219.2	1448	agagattctgactatgaagaca	205324	-	-	phosphatase	-
16156	MGC3234	NM_023947.2	434	gaagacttgcgcgttgagattgtg	205328	-	-	-	-
16157	NPPE1	NM_023075.2	1963	tctctcgaagaagctgaagcaag	205355	-	-	-	-
16158	OVGP1	NM_002957.2	1301	cggtcttgaacactgagatgagag	205388	-	-	hydrolase	-
16159	PIGO	NM_023634.2	3523	tttttttccctaaagtctatttt	205464	-	-	see also 9265 line	-
16160	PLP	NM_020315.3	202	cgcgaagcgcgtcttcttctgaa	205466	-	-	-	-
16161	SGPP2	NM_152386.2	232	aattacgtcttgagaattatttt	205470	-	-	-	-
16162	THEM2	NM_018473.2	465	ctttgataatgaactaacagac	205508	-	-	-	-
16163	VP529	NM_016226.2	578	aattgaagcagctgaactacaaa	205526	-	-	-	-
16164	COL4A3B	NM_005713.1	2203	aacgcagagctatcctaattttct	205574	-	-	see also 3982 line	-
16165	CSNK2B	NM_001320.5	895	cagctctacagctttcaagatcc	205588	-	-	see also 872 line	-

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16166	PRKDC	NM_006904.6	11629	atgtataaaggcgcaactatcag	205894	-	see also 4842 line	-
16167	PRKAG1	NM_002733.1	297	gtttatagacgcccctttatg	205912	-	see also 1772 line	-
16168	CKS2	NM_001827.1	145	acggtatccgcgcatcttgatg	205934	-	kinase-related, cell cycle	cyclin-dependent protein kinase SNF1A/AMP- activated protein kinase
16169	PRKAG3	NM_017431.1	764	tggtctgcatctactctacagg	205945	-	kinase related	general RNA polymerase II transcription factor
16170	GTF2H1	NM_005316.2	1711	aagccacaatttgtagtgcaca	205964	-	-	-
16171	BCR	NM_004327.2	2899	cagccgaacggcagaggtaca	205971	-	kinase related	-
16172	BRD2	NM_005104.2	3926	atgtcagcgacagctcaattct	206009	-	kinase-related	protein serine/threonine kinase
16173	FASTK	NM_006712.3	1036	tggtctacgtcaactctctgtg	206017	-	-	-
16174	H11	NM_014365.2	966	aggttgatctgtgacattatt	206024	-	kinase related	protein serine/threonine kinase
16175	EFNA4	NM_005227.2	229	cttgagctcaactgattactaga	206031	-	see also 3664 line	-
16176	EFNB3	NM_001406.3	784	ccgtctgcacacgattactaca	206048	-	receptor activity	transmembrane- ephrin receptor
16177	NR2P	NM_003872.1	774	tgctctctctgctgattactac	206068	-	see also 2633 line	-
16178	FGFR1	NM_021932.2	966	ccagcagctcctctactcaag	206105	-	receptor activity	-
16179	PDGFR	NM_006207.1	718	tgaaagcagctctcttctgaca	206125	-	receptor activity	-
16180	IGF2R	NM_000876.1	6206	agaggtctctctctctctaat	206235	-	see also 372 line	-
16181	CRKL	NM_005207.2	535	ggagcagctcctcctctatg	206306	-	kinase-related, signal transduction	protein tyrosine kinase
16182	WIF1	NM_007191.2	249	agctgagctcctctctatgatt	206333	-	see also 4987 line	-
16183	C9orf39	NM_017738.1	2846	agctctactctctctactcaag	206417	-	-	-
16184	KCNH2	NM_002335.2	1845	agtggtgctcctctctctence	206435	-	see also 174 line	-
16185	KCNH3	NM_012284.1	2416	gcgcgcacataccctctgtcc	206450	-	-	-
16186	KCNH4	NM_012285.1	1198	cgcttcggcagtgatctctctc	206463	-	channel, signal transduction	-
16187	KCNH8	NM_144633.2	1441	tcgctcgcaattgctctattg	206516	-	channel, signal transduction	-
16188	ATR	NM_001184.2	6429	ccctctcgatctgtctcaatga	206764	-	kinase-related, cell cycle	-
16189	ODK5R1	NM_003885.2	283	cggccacccgtggccactatag	206826	-	kinase related, cell cycle	cyclin-dependent protein kinase 5 activator

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16190	CDKN1A	NM_001389.2	235	gcagtaagcactgacgtttctca	208829		kinase related, cell cycle, apoptosis		bladder transitional cell carcinoma(膀胱移行上 皮癌), laryngeal cancer(喉癌), colorectal cancer(大腸癌), bladder cancer(膀胱癌), ovarian cancer(卵巢癌), colorectal cancer(結直腸 癌), non-small-cell lung cancer(非小細胞肺癌), squamous cell carcinoma(cytc)(扁平上皮細胞 癌), gastric cancer(胃癌)
16191	PRK32A	NM_002845.1	3064	caatttgatccgctacgacga	208921		see also 1719 line	phosphatidylinosito l 3-kinase, class	
16192	PRK32B	NM_002846.2	4822	aggactctaacgctttacatcttg	207041		kinase related		
16193	PRK32C	NM_004570.2	4394	cttattctccctcactgataag	207171		see also 3107 line		
16194	PRK33	NM_002647.2	1738	agcgaagtggaattatgaaga	207237		see also 1728 line		
16195	PRK3A	NM_008218.1	2968	aagctctctagtctatctgacga	207342		see also 4306 line		
16196	PRK3B	NM_008219.1	1310	ctctacgttggttaatacagtg	207382		see also 4313 line		
16197	PRK3R2	NM_005027.1	1664	caagatgaagcgtctactcaatga	207536		kinase related	phosphatidylinosito l 3-kinase	
16198	MGC26597	NM_152700.2	1432	aattcttcactgcacctcaaga	207545		kinase related		
16199	MGC46424	NM_173492.1	322	ctctcgaagcagcctcaacttcca	207550		kinase related		
16200	PIP5K1A	NM_003557.1	1373	garrcccttaacgaftaaacaca	207555		signal transduction		
16201	PIP5K1B	NM_003558.1	669	aagcactacgtctctactgactt	207559		see also 2365 line		
16202	PIP5K1C	NM_012398.1	254	ccggcgaacacctctcaagaag	207601		kinase related		
16203	PIP5K2A	NM_005028.3	770	atctacagcgtta-aktgtatgag	207626		kinase related	phosphatidylinosito l 4-phosphate 5- kinase	
16204	PIP5K2C	NM_024773.3	341	aggaacccctcgtctgctgttg	207634		see also 8742 line		
16205	IPHK1	NM_153273.1	715	agcagcagaagcctcaaatcttc	207687				
16206	IPHK2	NM_016291.1	384	aggaactctgtcttaatacctta	207699		kinase related		
16207	IPHK3	NM_054111.1	1271	caagattcaccgctgttatcttc	207720		kinase related, apoptosis		
16208	IPHK	NM_152230.1	1165	atttccctctgacacacataaga	207761		kinase related		
16209	PIPK4B	NM_002951.1	361	gagatccctctctgtatgcttc	207772		see also 1733 line		
16210	FRAP1	NM_004958.2	3674	ctgtctccacacgaactcaatca	207868		see also 3446 line		
16211	PI4K2B	NM_018323.2	568	garrcttctgtcaactcaatc	207950		kinase related		
16212	SMG1	NM_014006.2	8210	atcgcggttatctgaactaactc	208207		kinase related		
16213	DGKH	NM_152910.3	3387	caagaacacgctattcgaatag	208357		kinase related		
16214	DGKI	NM_004717.2	2348	garractccctatgtatcactaga	208409		kinase related	diacylglycerol kinase	
16215	FLJ10842	NM_018238.2	956	garrcttgaacgcgaacacaaaga	208449		see also 7339 line		
16216	CHK	NM_001271.1	894	tgrrcttgaacgctatgattt	208455		see also 842 line		
16217	FLJ10761	NM_018208.1	558	caagttatgcgctctgaatctga	208481		kinase related		
16218	XYLB	NM_005108.2	1336	tgrrgrrctgagcgaactcaatga	208513		kinase related		

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16219	RBK3	NM_022128.1	216	agctccatgctgctcaagttg	208527	-	see also 8291 line	-
16220	FLJ13052	NM_023018.2	383	agagagacagctctctctgag	208551	-	kinase related	NAD ⁺ kinase
16221	KHK	NM_000221.1	82	agagagactgcggagataagctgt	208582	-	kinase related	-
DK-FZP586								
16222	B1621	NM_015533.2	1587	agagactgctctctcaactcc	208587	-	see also 6455 line	-
16223	EK1	NM_018638.3	670	gtgacccaactcactgctacc	208586	-	kinase related	choline kinase
16224	FLJ1149	NM_018339.3	544	gtgacccaactcactcactgata	208627	-	kinase related	-
16225	PDXX	NM_003661.2	602	gtgtcgcctgcgcagactctatc	208645	-	kinase related	protein binding
16226	POLR2L	NM_021128.2	190	gagagacgtctcactaattgagacc	208702	-	transcription, regulat	DNA-directed RNA polymerase III
16227	POLR3D	NM_001722.1	549	gagagagagacactcguaatgac	208704	-	transcription, regulat	-
16228	POLR3F	NM_006468.2	263	cgagcggcactgagcactcaatg	208715	-	transcription, regulat	DNA-directed RNA polymerase III
16229	RP35	NM_018119.2	2139	cgaggttaagcgcgaactgctacc	208767	-	see also 7264 line	-
16230	USP49	NM_004275.2	245	cgagcccggaagctgctgctgct	208773	-	transcription, regulat	-
16231	POLD2	NM_006230.1	513	aggtcaccaattgagctgtcaaaagc	208786	-	or	zeta DNA polymerase
16232	POLD4	NM_021173.1	86	gcggtcctcactcactgctctacc	208801	-	-	delta DNA polymerase
16233	POLI	NM_007195.1	521	gtctcggtctcgtctatcaataa	208818	-	-	-
16234	OD32	NM_003818.2	552	atttgcgttcagattgaatgcttt	208871	-	transcription, regulat	phosphatidate
16235	GALT	NM_000155.2	1053	ctgcacactgcggaaattctacg	208918	-	or	cytidyltransferases
16236	PCYT1A	NM_005017.2	645	ctgcgcgacacacggatgcttt	208933	-	-	choline-phosphate cytidyltransferases
16237	PCYT1B	NM_004845.2	421	tcgtcactctgacaggaattatca	208954	-	-	choline-phosphate cytidyltransferases
16238	CMAS	NM_018686.3	999	agctcattggagataagattatca	208985	-	-	-
16239	NMAAT2	NM_015039.2	549	cgagcctcagcaactctgattg	209021	-	see also 7561 line	-
16240	UGP2	NM_007559.2	755	gtgatattatgcagctttctaac	209050	-	see also 6200 line	-
16241	UAP1	NM_003115.3	1077	atgcagagccaccggttctatgg	209094	-	see also 4768 line	UDP-N-acetylglucosamine pyrophosphorylase
16242	PCYT12	NM_020981.1	981	gtctcgcgcaagaagaaattata	209130	-	see also 1904 line	-
16243	IPG1	NM_003938.1	801	gggttgacatgcgcgtctcttaa	209156	-	-	-
16244	GMPGA	NM_013335.2	503	cgagcgcgaactcgtcactcagc	209187	-	see also 5403 line	-
16245	GMPPB	NM_013334.2	1283	tgggttgagagctcatgattgatt	209211	-	see also 5402 line	-
16246	MMNAT3	NM_178177.2	878	atgagatcagctgcacatacactc	209221	-	-	-
16247	DLG2	NM_001364.1	720	tgtactctcgagctgaattgagc	209229	-	see also 925 line	-
16248	DLG3	NM_021120.1	2213	cgagcctcagctgctaaatgagc	209305	-	see also 8095 line	-
16249	MAGI-3	NM_020965.2	823	ttagcattactcaattgctctta	209322	-	see also 8053 line	-
16250	MPPI	NM_002436.2	219	catgattcattcattgattact	209375	-	see also 1588 line	-

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16251	MPP3	NM_001932.2	487	gagagcctgcctattagaag	209414	kinase related	polylate kinase	-
16252	PMVK	NM_006556.2	848	tggaaacactatagaattac	209432	kinase related	phosphomevalonate kinase	-
16253	CKMT1	NM_020950.2	412	ttagccctcctgcctgctatcc	209441	kinase related	-	-
16254	CKMT2	NM_001825.1	654	tgagccctcctgcctgctatcc	209454	see also 1180 line	-	-
16255	GP11	NM_008090.2	703	tctgcgcctcctgcctgctatcc	209469	see also 4228 line	-	-
16256	PICF	NM_002643.2	272	ctctcctcctcctgcctgctatcc	209518	see also 1719 line	-	-
16257	CHPT1	NM_020244.1	686	ctcctcctcctcctgcctgctatcc	209530	see also 7819 line	-	-
16258	DPAGT1	NM_001382.1	1195	cagcctcctcctcctgcctgctatcc	209578	see also 950 line	-	-
16259	PRP-SAP1	NM_002786.1	874	agcctcctcctcctgcctgctatcc	209597	kinase related	-	-
16260	PRP-SAP2	NM_002787.2	217	tctgcgcctcctcctgcctgctatcc	209604	kinase related	-	-
16261	TPK1	NM_022445.2	228	ttagcctcctcctcctgcctgctatcc	209626	kinase related	-	-
16262	PGK1	NM_000291.2	115	ggagcctcctcctgcctgctatcc	209647	kinase related	HIF-1 alpha/HIF-1 beta-B complex	hemolytic anemia(溶血性贫血)
16263	PGK2	NM_138733.2	1121	ttagcctcctcctgcctgctatcc	209680	kinase related	phosphoglycerate kinase	-
16264	PYCS	NM_002860.2	289	ttagcctcctcctgcctgctatcc	209686	see also 1303 line	-	-
16265	MGC11134	NM_031472.2	527	ttagcctcctcctgcctgctatcc	209745	-	-	-
16266	B3GALT1	NM_020981.2	1237	agctatgcctcctgcctgctatcc	209781	-	-	-
16267	B3GALT2	NM_003783.2	1538	agctatgcctcctgcctgctatcc	209829	see also 2387 line	-	-
16268	B3GALT4	NM_003782.2	974	agcctcctcctgcctgctatcc	209834	-	-	-
16269	B3GALT5	NM_006057.1	1106	ctgcgcctcctgcctgctatcc	209853	-	-	-
16270	B3GNT1	NM_006577.3	1070	ttagcctcctcctgcctgctatcc	209886	see also 4609 line	-	-
16271	B4GALT1	NM_001497.2	174	ttagcctcctcctgcctgctatcc	209905	-	transferase, transferring	-
16272	B4GALT2	NM_003780.2	574	gagcctcctcctgcctgctatcc	209936	see also 2385 line	glycosyl groups	-
16273	B4GALT3	NM_003779.2	909	agctcctcctcctgcctgctatcc	209953	see also 2384 line	-	-
16274	B4GALT4	NM_003778.2	977	agctcctcctcctgcctgctatcc	209980	-	transferase, transferring	-
16275	ABO	NM_020469.1	285	ctgcgcctcctgcctgctatcc	209993	-	glycosyl groups	-
16276	B4GALT7	NM_002755.1	715	cgcctcctcctgcctgctatcc	209998	-	transferase, transferring	-
16277	G1GALT1	NM_020156.1	393	ttagcctcctcctgcctgctatcc	210011	-	glycosyl groups	-
16278	A4GALT	NM_017436.3	791	ctgcgcctcctgcctgctatcc	210035	-	xylosylprotein 4-beta-galactosyltransferase	-
16279	B3GNT3	NM_014256.2	901	gagcctcctcctgcctgctatcc	210049	-	transferase, transferring	-

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16280	B3GN14	NM_030765.1	759	acttcccaacgttttaaatc	210059	-	-	-	-
16281	B3GN15	NM_032047.2	762	atctatgacctgaattatga	210063	-	-	-	-
16282	B3GN17	NM_148236.1	425	ggagcgttgcacccatcagc	210112	-	-	-	-
16283	B4GALT5 IMAGE:490	NM_004776.2	834	gtatgcgaacatctatgagct	210138	-	-	transferase, transferring glycosyl groups	-
16284	T098	NM_138706.1	773	gcacagcttggaacatacttc	210144	-	-	-	-
16285	MGC3958	NM_152490.1	1200	actttctgcactactctaat	210169	-	-	-	-
16286	MGC4855	NM_033309.1	1109	ggcgtgctgcagctactcatc	210196	-	-	-	-
16287	DSOR5	NM_016430.2	637	ttcagcgaagagctcttacc	210207	-	-	see also 6856 line	-
16288	PIGA	NM_002641.1	1485	acggagctcctggactataact	210251	-	-	see also 1714 line	-
16289	PIGC	NM_153747.1	1000	ttgagggcctactgctccatgt	210272	-	-	enzyme	-
16290	PIQG	NM_004204.2	863	ttgagcactctgcactatcttc	210279	-	-	see also 2813 line	-
16291	CZGN13	NM_016591.1	1077	ctgttcgggtactatgcacagg	210284	-	-	-	-
16292	CGN12	NM_001491.2	1634	ctgtctctatgccaaactcatcc	210351	-	-	-	-
16293	CGN13	NM_004751.1	1512	cagcggctatctcgtttatgg	210423	-	-	-	-
16294	FLJ20277	NM_017739.1	436	ctgacgctatgagttatccagg	210428	-	-	see also 7128 line	lung squamous cell carcinoma(肺扁平上皮癌)
16295	MGAT1	NM_002406.2	1641	ggagagcttcgggttcgaatagc	210446	-	-	transferase, transferring glycosyl groups	-
16296	MGAT4A	NM_012214.1	139	agagctccaaactggagactatgac	210451	-	-	see also 5202 line	-
16297	MGAT4B	NM_014275.2	138	agcgcacgtttggagcgtttacc	210490	-	-	see also 5576 line	-
16298	GCN11	NM_001490.3	1252	agcgcctatgagcttccttaagg	210552	-	-	transferase, transferring glycosyl groups	-
16299	B3GN16	NM_006876.1	675	agcgccttggcaccactgctcc	210555	-	-	-	-
16300	MGAT2	NM_002408.2	954	ctggcgcgcgcagatcattcagc	210578	-	-	see also 1557 line	-
16301	MGAT5	NM_002410.2	3941	ttgtctgtcaaccctgaattaat	210634	-	-	Ets1 / Ets2	-
16302	alphaGnT	NM_016161.1	734	aggtctctcgtactcagtaaat	210667	-	-	-	-
16303	XYL1	NM_022166.1	2333	ggagagctatctccgaactttgg	210691	-	-	-	-
16304	XYL12	NM_022167.1	2351	ttgaccttcacgcgaactacc	210711	-	-	see also 3320 line	-
16305	FUT1	NM_000148.1	766	ttgggacctcttcgaggtttggc	210719	-	-	transferase, transferring glycosyl groups Bombay phenotype(ボンベイ型表現型)	-
16306	FUT2	NM_000511.1	191	aggacctttctactatacactcc	210725	-	-	transferase, transferring glycosyl groups	-
16307	FUT8	NM_004480.3	2085	acgttcaagtaccacactatcc	210773	-	-	see also 3030 line	-
16308	FUT10	NM_032864.3	514	agcaagcctaccagctcttaat	210768	-	-	-	-
16309	FUT11	NM_173540.1	977	aggaactgcatgcgaactacc	210828	-	-	-	-
16310	FUT4	NM_002033.1	1347	ggagcagcgtttccgaactatgg	210841	-	-	transferase, transferring glycosyl groups leukemia(白血病)	-

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16311	FUT7	NM_004478.1	554	gcgcacactcggacactctttggc	210846	transferring glycosyl groups
16312	FUT8	NM_005581.2	1319	agctttgcttcgcacatcgaga	210867	see also 4610 line
16313	UGT1A10	NM_019075.1	1086	gcgcacacacgcactctgttaa	329679	human glucuronosyl/transferases
16314	UGT2A1	NM_006798.1	925	tgttgcgcatactagctcttaa	210903	human
16315	UGT2B10	NM_001076.2	355	cttgcccaataaagacacaaata	210933	human glucuronosyl/transferases
16316	UGT2B11	NM_001073.1	209	atgatgcattccactcttaaat	210934	human glucuronosyl/transferases
16317	UGT2B15	NM_001076.1	529	ctctacagctcttcgattctctgt	210943	human glucuronosyl/transferases
16318	UGT2B17	NM_001077.1	1078	aagaagccaaactactttgcttc	210947	human glucuronosyl/transferases
16319	UGT2B28	NM_053038.1	82	tgtcttgaccagtgatcacagc	210948	human glucuronosyl/transferases
16320	UGT2B4	NM_021138.1	238	cagccactctactctcttaatttg	210950	human glucuronosyl/transferases
16321	UGT2B7	NM_001074.1	346	aagtacaggaactctcttcaata	210962	human glucuronosyl/transferases
16322	GALNT2	NM_004481.2	969	ttagaagtcgcgcttcttaaga	210970	see also 3033 line
16323	GALNT3	NM_004482.2	592	tgttcacatgcttgataaactgt	211020	see also 3035 line
16324	GALNT5	NM_014568.1	2089	gtgcctctccactaatgaagt	211101	see also 5755 line
16325	GALNT7	NM_017423.1	1011	gttcgcttatagctctctaaag	211179	see also 6988 line
16326	GALNT8	NM_017417.1	370	ataagtagccctctcttaag	211213	human
16327	GALNT9	NM_021806.2	538	cggaaatgaaggtctctacacac	211246	see also 8175 line
16328	GALGT	NM_001478.2	1283	aagacctctctcgttatgctgc	211255	transferring glycosyl groups
16329	DDOST	NM_005216.3	1033	ctacactatgaatctatgcctc	211278	dolichyl- diphospho-
16330	RPN2	NM_002861.2	1349	gttccacacggttatcttcnaat	211503	oligosaccharide- protein
16331	ALG5	NM_013336.3	622	tatctctcgctctcattcgaaa	211336	see also 1933 line
						see also 5404 line

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16332	ALC6	NM_013339.2	1142	ttccagctccacacaaatt	211386	-	-	-	congenital disorder of glycosylation (先天性糖鎖形成不良)
16333	ITM1	NM_152713.2	1575	aggatgcagcagatgacatatt	211443	-	-	-	-
16334	SMP	NM_178862.1	239	agaattgcagcagcagtttaac	211461	-	-	-	-
16335	PYGB	NM_002862.3	1980	cggtgcagctgcctcaattacac	211588	-	-	transferase, glycosyl groups	colorectal cancer (大腸癌), colorectal cancer (結腸直腸癌), gastric cancer (胃癌)
16336	PYGL	NM_002863.1	788	ctctctgcagcacaatgacttt	211582	-	-	-	-
16337	PYGM	NM_005609.1	2522	aagcagttacagatataaacg	211646	-	-	-	-
16338	MTAP	NM_002451.2	144	ccgcgcgtgaagttggaataatt	211681	-	-	transferase, transferring glycosyl groups	-
16339	NP	NM_000270.1	600	atgcctcagcagcagcactatgag	211694	-	-	transferase, glycosyl groups	-
16340	GYG	NM_004130.2	369	ctgtgcttcacaaatttgaatga	211702	-	-	transferase, glycosyl groups	immunodeficiency (免疫不全症)
16341	GYG2	NM_003918.1	1286	cggtgcctccatgttcacattca	211744	-	-	glycogenin	-
16342	UGGL1	NM_020120.1	310	atgcagcagcagcattttccac	211765	-	-	glycosyltransferase	-
16343	GYS1	NM_002103.3	1282	atgcacagcagcagcacaacattt	211901	-	-	transferase, transferring glycosyl groups	-
16344	UGG	NM_003358.1	1355	ccgcagatccatgacataatca	211956	-	-	-	diabetes mellitus (糖尿病), diabetes (糖尿病)
16345	POMT2	NM_013382.3	1895	tgcatgcgccttcacatctca	211986	-	-	-	-
16346	SDF2	NM_006923.2	336	ttgcgagaaccttcctatgcacc	211992	-	-	-	-
16347	DPMT	NM_003859.1	672	ttgcagagtttcccatattttg	212013	-	-	-	-
16348	AD-017	NM_018446.1	248	ttgagcttcacactatagacttt	212018	-	-	-	-
16349	FLJ21934	NM_022743.1	416	gtccctatgcagcagcactacaga	212073	-	-	-	-
16350	FLJ34658	NM_152404.2	507	ttggctcactatgtattttg	212083	-	-	-	-
16351	FLJ35155	NM_152531.3	1190	actttctgcagcagcacttcagc	212099	-	-	-	-
16352	H	NM_013244.2	872	aagaagcgcgtctcttcacattg	212114	-	-	-	-
16353	LARGE	NM_004737.2	1784	cttgatgtatgcagcaactctct	212167	-	-	-	-
16354	LOC16712	NM_174914.2	233	aagatcagcagctcaatattccac	212175	-	-	-	-
16355	LOC83468	NM_013302.2	669	cgatatactgcagctgacatgc	212193	-	-	-	-
16356	UGGL2	NM_020121.2	1682	ctgagcagccttcaactatattg	212287	-	-	-	-
16357	ADPRTL1	NM_006437.2	3126	cagcaaatcgtccagctttaagtg	212437	-	-	transferase, transferring glycosyl groups	-

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16358	ADPRT1.3	NM_005485.2	687	gggaacatcacacttatcgaag	212481	-	-	transferase, transferring glycosyl groups	-
16359	ART1	NM_004314.1	962	tgaaccttgcaacttggaatt	212493	-	-	transferase, transferring glycosyl groups	-
16360	ART3	NM_001179.2	152	atgctctggcaccaatgatct	212495	-	-	transferase, transferring glycosyl groups	-
16361	TKNS2	NM_025235.2	1824	aagagagtatctcattagtgat	212555	-	-	transferase, transferring glycosyl groups	-
16362	ART5	NM_053017.2	1168	gggaacgggtgacctcatatga	212621	-	-	transferase, transferring glycosyl groups	-
16363	DO	NM_021071.1	914	ctgggaacctgaacacatataac	212654	-	-	transferase, transferring glycosyl groups	-
16364	PRIFDC1	NM_020200.3	62	ggggcggggcctgctgcttatgg	212658	-	-	transferase, transferring glycosyl groups	-
16365	QTR1	NM_031209.1	761	aggacgaacccagatgatcatg	212697	-	-	transferase, transferring glycosyl groups	-
16366	QTR1D1	NM_024638.2	239	gactctcaacgaagatgaatg	212698	-	-	transferase, transferring glycosyl groups	-
16367	UPP1	NM_003364.2	858	gactctcaacgaagatgaatg	212736	-	-	transferase, transferring glycosyl groups	-
16368	UMPS	NM_000373.1	413	tgaacataagctctgagaag	212747	-	-	transferase, transferring glycosyl groups	-
16369	SIAT4A	NM_003033.2	1328	gggaagaagcccaactg	212777	-	-	transferase, transferring glycosyl groups	-
16370	SIAT4B	NM_009272.2	1401	gggaactctggcgaactctt	212780	-	-	transferase, transferring glycosyl groups	-
16371	SIAT4C	NM_006278.1	1054	gggaactctggcgaactctt	212800	-	-	transferase, transferring glycosyl groups	-
16372	SIAT7C	NM_152598.1	810	gggaactctggcgaactctt	212818	-	-	transferase, transferring glycosyl groups	-
16373	SIAT7D	NM_014403.3	284	gggtcggctgctgctcatctcc	212832	-	-	transferase, transferring glycosyl groups	-
16374	SIAT1	NM_003032.2	1115	tgttaccagaatcgggattataa	212862	-	-	transferase, transferring glycosyl groups	-
16375	SIAT8A	NM_003034.2	932	tgccttggcctcgaatagatg	212883	-	-	transferase, transferring glycosyl groups	-
16376	SIAT9	NM_003896.2	514	gggtatagatggatgactactcc	212902	-	-	transferase, transferring glycosyl groups	-
16377	SIAT7A	NM_018414.2	1334	tgggaactcggggtttcaagaac	212929	-	-	transferase, transferring glycosyl groups	-
16378	SIAT10	NM_006100.2	690	tgttatgttagctagaattga	212970	-	-	transferase, transferring glycosyl groups	-
16379	SIAT7E	NM_030965.1	1093	ctgggaacggatcactatcttc	213003	-	-	transferase, transferring glycosyl groups	-
16380	SIAT8B	NM_006011.2	162	caacttcaacgaacatcataa	213008	-	-	transferase, transferring glycosyl groups	-
16381	SIAT8C	NM_015879.1	2192	tgggaactcggggtttcaagaac	213026	-	-	transferase, transferring glycosyl groups	-
16382	SIAT8D	NM_005669.3	333	tgggaactcggggtttcaagaac	213060	-	-	transferase, transferring glycosyl groups	-
16383	SIAT8E	NM_013305.2	630	atgcaagaacacatcaagaag	213098	-	-	transferase, transferring glycosyl groups	-
16384	SI6Gall	NM_023261.1	1090	caaggcgaacacacactctcc	213178	-	-	transferase, transferring glycosyl groups	-

Dombrock blood group (赤血球ミナシ)

melanoma(メラノーマ)

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16385	ST6GALN AC6	NM_013443.3	507	gagtgtaaatcagcagtgatga	213146	-	-	-	-
16386	STHM	NM_008456.1	484	ggagcaaccctccaaagatgato	213158	-	-	transferring glycosyl groups	-
16387	ALG12	NM_024105.2	1151	gagcagccttcctacacacagc	213182	-	-	-	-
16388	ALG3	NM_005787.3	308	gagcagtggttgctgctatcttt	213180	-	-	see also 4045 line	-
16389	ALG8	NM_024079.2	407	gctccctcagagctctcaagagc	213205	-	-	see also 8382 line	-
16390	C1GAL12	NM_156822.2	685	ggcccccacagctgctatctaa	213263	-	-	-	-
16391	DP42	NM_003863.2	145	gagcagctctccacaaagtattt	213274	-	-	-	-
16392	EXT1	NM_001271.1	2708	gtggcaaatggccaaacttgga	213342	-	-	see also 100 line	-
16393	EXT2	NM_000401.1	1022	aggttgatcagagtaacaaaca	213364	-	-	see also 321 line	-
16394	EXTL1	NM_004455.1	1141	ggggcgatggccttaagatttc	213408	-	-	transferring glycosyl groups	-
16395	EXTL2	NM_001439.1	330	ggatctcagctgcttgcttatto	213430	-	-	transferring glycosyl groups	-
16396	EXTL3	NM_001440.1	1320	ctgccttaactgactactatgag	213472	-	-	see also 1009 line	-
16397	HAS1	NM_001523.1	952	gcagctctctaaagctatataag	213501	-	-	transferring glycosyl groups	-
16398	HAS2	NM_005328.1	796	ttcatctctctctatacaagag	213519	-	-	see also 3173 line	-
16399	MFNG	NM_002405.2	1053	ggaggagccctccagatttgc	213592	-	-	transferring glycosyl groups	-
16400	SNP3	NM_025163.2	965	tgccacaggagcagctgatttcc	213595	-	-	-	-
16401	BA18	NM_008708.2	134	ggggcacccctctgctggaaga	213597	-	-	-	-
16402	SE17	NM_030446.1	478	cgagggtttccctctctgaaga	213637	-	-	see also 8821 line	-
16403	C20br36	NM_012571.1	802	cgatgctgctctactactgag	213667	-	-	-	-
16404	LOC11529	NM_052937.1	946	ggagatttaacctgaactgattg	213707	-	-	see also 9460 line	-
16405	PCMT1	NM_005389.1	572	cgaggcgttaatagatcagtaaa	213727	-	-	protein-L-isoaspartate (D-aspartate) O-methyltransferase	-
16406	BHMT	NM_007173.1	281	cgaggcgcaactgctcttagaga	213744	-	-	homocysteine S-methyltransferase	-
16407	BHMT2	NM_017614.3	362	ctgcgcagctcaatatacaaat	213766	-	-	-	-
16408	MTR	NM_000254.1	717	ggcctctgctcagctaaabag	213779	-	-	homocysteine S-methyltransferase	-
16409	METL1	NM_005371.3	961	ggagagctgattatacctaaccc	213858	-	-	-	-
16410	HSAG761	NM_014473.1	745	ggagatgctgaagatgataaac	213881	-	-	see also 5689 line	-
16411	TFB1M	NM_016020.1	648	gcgtatgcctctctctgctgag	213916	-	-	see also 0021 line	-

homocystinuria(ホモシチン尿症)、
Methylcobalamin deficiency(メチルコバラミン欠
損症)

16412	FLJ10140	NM_018006.2	827	ggggagattacgaagaagcttg	213941	-	-	-	-
16413	ICMT	NM_01405.2	679	tggtttgcgcactctctacg	213968	-	-	-	-
16414	PEMT	NM_007169.2	514	gggttcctgcagacttctcagg	213971	-	-	-	-
16415	PNMT	NM_002686.2	974	ggagactccgcacatcatcag	213986	-	-	-	-
16416	COQ3	NM_017421.2	105	ctcagctccctbaattctctcg	213989	-	-	-	-
16417	CGE-30	NM_015958.1	787	cagttgcgcgcgcgcgcctctg	214035	-	-	-	-
16418	BNMT	NM_006774.3	181	ggggacacgcgcgtgcagcttg	214054	-	-	-	-
16419	TPMT	NM_000367.1	809	ctcggctctctcttttgatcc	214085	-	-	-	-
16420	NNMT	NM_006169.1	823	ggagctatctgcgaagtatttc	214077	-	-	-	-
16421	AD-003	NM_017064.1	397	agttgagatagtgccataacg	214081	-	-	-	-
16422	C2orf8	NM_025264.2	1197	ttgcgcgaacctggtatgttg	214115	-	-	-	-
16423	OGI-01	NM_015935.2	1489	acggctctctacgagtgctaaa	214141	-	-	-	-
16424	CYT19	NM_020682.2	803	aagcatgctgggagtgattattt	214166	-	-	-	-
16425	FLJ10640	NM_018023.1	1703	tgagcagcgcgtctctcctacc	214200	-	-	-	-
16426	FLJ20628	NM_017910.2	70	gggctctgcgaacctcctcc	214205	-	-	-	-
16427	FLJ23841	NM_144589.2	774	gtgtgcgaacctaaacgac	214260	-	-	-	-
16428	HNMT	NM_006895.1	875	tgacacactagggccttaagat	214277	-	-	-	-
16429	HRMT1L1	NM_001535.1	394	gggtacactcgggcaaacctgt	214286	-	-	-	-
16430	HRMT1L2	NM_001536.2	226	cgcgaactcaactggtctaaccc	214303	-	-	-	-
16431	HRMT1L3	NM_019854.2	686	ttctacgttgtaggctctaaaga	214318	-	-	-	-
16432	LCHT1	NM_016301.2	752	aaagaaatgctgctttatggagc	214341	-	-	-	-
16433	MGCI7301	NM_152633.1	692	gaaccacgtcgaacacactctgg	214361	-	-	-	-
16434	MG22408	NM_032331.2	135	cagatctgcctccctacacttgg	214382	-	-	-	-
16435	MG224132	NM_152396.1	788	tcgagctacaggtctgttgttgc	214391	-	-	-	-
16436	MG350559	NM_173802.2	743	atgactatcacaaatgttgc	214410	-	-	-	-
16437	NCOA6P	NM_024831.5	498	cgcgtgtgcgaagatgttctct	214422	-	-	-	-
16438	SRM	NM_003132.1	576	atgccttcagcggctcctcact	214505	-	-	-	-
16439	WBCR22	NM_017529.2	677	gggcttcgcactttataacaga	214518	-	-	-	-
16440	GART	NM_000819.3	1349	tcggtcttcgtgcacatgcttc	214559	-	-	-	-

thiourine S-methyltransferase deficiency/チオプリン S-メチルトランスフェラーゼ欠損症、
leukemia(白血病)

thiourine S-methyltransferase
methyltransferase
nicotinamide N-methyltransferase

methyltransferase
methyltransferase
methyltransferase

see also 6997 line
see also 4826 line
signal transduction

adenosylmethionin e-dependent methyltransferase
adenosylmethionin e-dependent methyltransferase
adenosylmethionin e-dependent methyltransferase

adenosylmethionin e-dependent methyltransferase
adenosylmethionin e-dependent methyltransferase
adenosylmethionin e-dependent methyltransferase

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adenosylmethionin e-dependent methyltransferase
adenosylmethionin e-dependent methyltransferase

adenosylmethionin e-dependent methyltransferase
adenosylmethionin e-dependent methyltransferase
adenosylmethionin e-dependent methyltransferase

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16441	MFRMT	NM_139242.2	726	ccgactccgcccgaatttc	214621	-	-	-	-
16442	FTIHD	NM_012190.2	1393	ggccacacacacacacac	214656	-	-	-	-
16443	SHMT1	NM_004169.3	274	caatcttcttgatctcaac	214673	-	-	-	-
16444	SHMT2	NM_005412.3	931	ccggagagatccctccacgtt	214698	-	-	-	-
16445	AMT	NM_004481.1	1326	ttggccacacacacacacac	214720	-	-	-	-
16446	DNQDH	NM_013371.2	1490	ccgcgcacacacacacacac	214772	-	-	-	-
16447	PDP1	NM_017990.3	3097	tcgcgtctcgaatgagacgt	214809	-	-	-	-
16448	SARDH	NM_007107.2	1774	gagcagcggaggtttcatcc	214831	-	-	-	-
16449	TYMS	NM_001071.1	623	acgcagagaatcatcatcttc	214846	-	-	-	-
16450	FLJ20257	NM_019608.3	2048	ttctctctcgaatcttatttc	214864	-	-	-	-
16451	FTSJ1	NM_012280.2	267	gtccagggctctcgaatcttc	214874	-	-	-	-
16452	FTSJ2	NM_013393.1	644	ccgcgtctcgaatcttgcacgt	214883	-	-	-	-
16453	LOC57019	NM_020313.1	719	tcgaagcctcgaatcttgcacgt	214900	-	-	-	-
16454	GATM	NM_001482.1	544	gaatctcaggtttatcacgttc	214941	-	-	-	-
16455	NAT1	NM_000662.3	621	tggtatctatgacaaatcagaac	214971	-	-	-	-
16456	NAT2	NM_000015.1	684	acgcgtgaacctcggaacaattga	214986	-	-	-	-
16457	SAT	NM_002970.1	563	atracacatcatcaactcttat	215007	-	-	-	-
16458	NAGS	NM_153006.1	897	tcgcacacacacacacacac	215017	-	-	-	-
16459	CML2	NM_016347.1	278	tcgcacacacacacacacac	215029	-	-	-	-
16460	GSRP2BP	NM_020356.2	2180	tggtctcgcggaggtttatgc	215051	-	-	-	-
16461	OKFZP564	NM_015554.3	477	acgtcagctgcgcacacacac	215078	-	-	-	-
16462	ELP3	NM_018097.3	52	atctctgactatgagatgattt	215094	-	-	-	-
16463	FLJ13848	NM_024771.1	713	ggagaggtgctctatgagatc	215144	-	-	-	-
16464	KLP1	NM_020378.2	417	ctgcgcctcgcacaaatgcagtg	215157	-	-	-	-
16465	MAK3P	NM_025146.1	484	aggtctgctcattcacagatca	215164	-	-	-	-
16466	NAT5	NM_016100.2	361	ttggtttgctctaacactatg	215183	-	-	-	-
16467	SAT2	NM_133491.2	432	atggatgactatcttctcac	215203	-	-	-	-
16468	GTF3C4	NM_012204.1	1407	gttaattctcagctatgattgg	215233	-	-	-	-
16469	ACAT1	NM_000019.2	401	ttggcagcagctcactctcttc	215258	-	-	-	-
16470	HADHA	NM_000182.3	1898	aaagcttctcagctcagatc	215339	-	-	-	-
16471	GCAT	NM_014291.2	1203	gtctatcagcagcagcagcagc	215362	-	-	-	-
16472	CHAT	NM_020549.2	1272	caggaactcctctgcaaacact	215367	-	-	-	-
16473	CRAT	NM_000755.2	692	caggaactcctctggtttcttgc	215392	-	-	-	-

bladder cancer (膀胱癌), lung cancer (肺癌)
 bladder cancer (膀胱癌), Parkinson disease (パーキンソン病)

glycine hydroxymethyltransferase
 transaminase
 glycine encephalopathy (グリニン脳症)

alpha-methyl/acetocoaceticaciduria (α-メチル/アセト
 シン酸尿症)

transaminase
 transaminase
 Alzheimer disease (アルツハイマー病)

図 46 (続き)

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16474	GNPAT	NM_014226.1	1183	gagctgagctgctataactg	215427	—	glycerone-phosphate O-acyltransferase	chondrodysplasia (軟骨異形成症)
16475	NYT1	NM_021079.3	1025	ctgagctgctgacatgagaaac	215454	—	—	—
16476	NMT2	NM_004908.1	500	gagagctatcacagctgctaa	215471	—	see also 8079 line	see also 3342 line
16477	AGPAT1	NM_004111.2	495	gagagctgacagctgagacatg	215505	—	—	—
16478	AGPAT4	NM_020133.1	1205	gctgagctgagctgagctgag	215529	—	—	—
16479	LPAA1-e	NM_015361.1	1044	ctgctgctgagctactaaag	215556	—	see also 7414 line	—
16480	OPT1A	NM_001876.1	2050	ctgctcttactgctgctctaat	215598	—	Peroxisome proliferator activated receptor alpha	hypoglycaemia (低血糖症)
16481	OPT1B	NM_004377.2	1705	gagagagctgagctgctactgc	215621	—	—	—
16482	CPT2	NM_000098.1	1980	ctctgacacctgcgcattcaag	215651	—	—	hypoglycaemia (低血糖症), myopathy (ミオパシー), Alzheimer disease (アルツハイマー病), carnitine palmitoyltransferase I (CPT II) deficiency (カルニチンパルミトイルトランスフェ
16483	CROT	NM_021151.2	1372	ttctgctctactgcttacaatct	215715	—	—	—
16484	SCAT1	NM_003101.3	2219	gtctctgagctgactaaatcagc	215761	—	—	—
16485	SCAT2	NM_003578.2	255	gctgctgagctgactaaatcacc	215789	—	—	—
16486	LCAT	NM_000229.1	295	ggctgagctgctgctgctgataac	215804	—	—	—
16487	KIAA1560	NM_020918.2	735	ctctctctctgagctgctgctcaga	215830	—	—	—
16488	ACAA1	NM_001807.2	1104	gttgacatctctgctgctaaatga	215903	—	see also 8021 line	—
16489	ACAA2	NM_006111.1	55	ctgctctgagctgctgcttctaat	215907	—	—	—
16490	HADHB	NM_000183.1	628	gagctgagctgcttcttctctctaa	215925	—	—	—
16491	SPTLC2	NM_004963.2	1007	gagctgacacattagaactcttca	216004	—	—	—
16492	DLST	NM_001933.3	939	gttatgacgacacacacaaaga	216031	—	—	—
16493	ALAS1	NM_000688.4	1381	gagcagactgctgctgctgctgctat	216054	—	—	—
16494	ALAS2	NM_000032.1	1723	ctctctgctgctgctgctgctgctg	216076	—	—	—
16495	A1E1	NM_007041.1	997	gagctgctgctgctgctgctgctg	216101	—	—	—
16496	ALP1	NM_021103.2	1303	gttatgctgctgctgctgctgctg	216131	—	—	—
16497	BAAT	NM_001701.1	1271	cttatgactgctgctgctgctgctg	216177	—	—	—
16498	OPT1C	NM_132359.1	1542	atctgctgctgctgctgctgctg	216190	—	—	—
16499	DGAT2	NM_032564.2	629	gctctgctgctgctgctgctgctg	216207	—	—	—
16500	DGAT2L1	NM_058165.1	963	gagctgctgctgctgctgctgctg	216239	—	—	—

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図4B (続き)

16501	DKFZp586	1740	ggagactcagtgctggttaccga	216268	-	see also 10210 line	-
16502	M1819	772	tgagaaagccactaatgattg	216287	-	see also 9860 line	-
16503	FLJ37965	607	ttgcctctgagatactacc	216301	-	-	gamma-glutamyl transferase
16504	GGTLA1	1204	ggagtcacattctacgtttac	216311	-	-	-
16505	GLVAT	284	atgcctgctgctacacacat	216319	-	-	-
16506	KIAA0205	377	catgaagagattctgatatg	216325	-	see also 6060 line	-
16507	LRAT	713	ctctgagcttggttatatg	216374	-	-	retinal dystrophy (網膜ジストロフィー)
16508	MGAT2	117	tgacccctgctgctgctatcc	216387	-	-	-
16509	MGAT3	631	agctcatgctgacacactatg	216403	-	-	-
16510	MG011924	284	ttgggtcccaatgagattgaa	216413	-	-	-
16511	QPCT	357	gggtacgcgtctctcaaat	216450	-	-	glutaminyl-peptide cyclotransferase
16512	TAZ	937	ctgtgcctgtctggaatgaatga	216476	-	-	methylglutamate aciduria (メチルグルタミン酸尿症), cardiomyopathy (アルコウ心臓病), endocardial fibroelastosis (心内膜弾性線維症)
16513	GGTL3	632	atgagagccactaatgatttc	216485	-	-	-
16514	HMGGS1	802	gtcttgtagccgtctctatct	216520	-	see also 1367 line	-
16515	HMGGS2	985	ctgctctcctgatttcaatga	216567	-	see also 3849 line	-
16516	CS	922	aggtctactgatactcattcca	216588	-	-	citrate (S)-synthase
16517	OLYBL	818	aggttatcaaccctaaccaant	216609	-	see also 9591 line	-
16518	GSTA4	722	aagaaagctctccctgattgaat	216622	-	-	glutathione transferase
16519	GSTM1	385	ctggagcagctgctgataacac	216626	-	-	bladder cancer (膀胱癌), breast cancer (乳癌), lung cancer (肺癌), head and neck cancer (頭頸部癌), non-small-cell lung cancer (非小細胞肺癌), head and neck squamous cell carcinoma (頭頸部扁平上皮細胞癌)
16520	GSTM2	513	gtgatattcctgctctgattgct	216629	-	-	glutathione transferase
16521	GSTM3	207	gatttcacgatacctcttata	216632	-	-	glutathione transferase
16522	GSTM4	736	ggagagagccatgtttttttg	216643	-	-	-
16523	GSTO1	711	aggagctgctgctgctatcagc	216645	-	-	-
16524	GSTO2	690	aggagctgctgctgctatcagc	216658	-	see also 10291 line	-
16525	GSTP1	144	tggcaggaggctgctcctcaaac	216680	-	-	Smad3/Sp-1 heterodimer
16526	GSTT1	88	ctctgctatcgtgtgattgataa	216684	-	-	breast cancer (乳癌), head and neck cancer (頭頸部癌), head and neck squamous cell carcinoma (頭頸部扁平上皮細胞癌)
16527	GSTT2	262	aagcttgagcactcgttattacc	216692	-	-	glutathione transferase

圖 46 (續上)

[illegible]

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図4-6 (続き)

16553	CHST6	NM_021161.2	1289	gcgcacacgcgcgcattcag	217425	-	-	-	Alzheimer disease(アルツハイマー病)
16560	CHST1	NM_003654.2	1327	tccttaagaaccgcgcattaac	217428	-	-	-	-
16561	CHST10	NM_004954.2	1268	gcgcattaccgcgcgcattacaga	217449	-	-	-	see also 3374 line
16562	CHST2	NM_004261.2	1137	aaatcaaccacacgcgcattaaa	217459	-	-	-	-
16563	CHST5	NM_012126.1	824	gcgcacgatgcgcgcattctttt	217463	-	-	-	-
GALNAC4									
16564	S-BST	NM_014863.1	1499	ccgcataccgcgcgcgcattcttc	217492	-	-	-	see also 6063 line
16565	GPST	NM_021134.1	969	ccgcgcgcgcgcgcgcgcattcttc	217512	-	-	-	-
16566	HSST5	NM_15361.1	428	ccgcgcgcgcgcgcgcgcattcttc	217538	-	-	-	-
16567	HCAG	NM_032160.1	5107	ccgcgcgcgcgcgcgcgcattcttc	217670	-	-	-	-
16568	NDST4	NM_022568.1	3037	gggcgcgcgcgcgcgcgcattcttc	217737	-	-	-	see also 8422 line
16569	SULT1B1	NM_014463.2	672	atgcctatgcgcgcgcgcattcttc	217759	-	-	-	-
16570	SULT1C1	NM_001059.2	839	tcgcctgaacgcgcgcgcgcattcttc	217778	-	-	-	see also 648 line
16571	SULT1B2	NM_004605.2	310	gggcgcgcgcgcgcgcgcattcttc	217788	-	-	-	-
16572	SULT1A1	NM_014351.2	471	gaactccaagcgcgcgcgcattcttc	217800	-	-	-	-
16573	UST	NM_005715.1	675	ccgcaccaacgcgcgcgcattcttc	217828	-	-	-	see also 3968 line
MPST									
16574	MPST	NM_021126.3	730	gaicccgcgcgcgcgcgcattgaacc	217844	-	-	-	thiosulfate sulfurtransferase
TST									
16575	TST	NM_003312.4	429	tgccacaccgcgcgcgcattgaacc	217848	-	-	-	structural constituent of cytoskeleton
OXCT									
16576	OXCT	NM_000436.1	1271	tgacacatcgcgcgcgcgcattgaacc	217872	-	-	-	3-oxoacid CoA- transferase
AGXT									
16577	AGXT	NM_000030.1	1096	cgctaacaccgcgcgcgcattgaacc	217880	-	-	-	serine-pyruvate aminotransferase
16578	AGXT2	NM_031900.1	546	aggcgcgcgcgcgcgcgcattgaacc	217893	-	-	-	hyperoxaluria(過シュウ酸尿症)
16579	AGXT2L	NM_031279.2	597	ggatgcgcgcgcgcgcgcattgaacc	217927	-	-	-	aldehyde aminotransferase
16580	BCAT1	NM_005504.3	1396	cgctaacaccgcgcgcgcattgaacc	217960	-	-	-	see also 3846 line
BCAT2									
16581	BCAT2	NM_001190.1	1039	gtgcgcgcgcgcgcgcgcattgaacc	217990	-	-	-	branched-chain amino acid aminotransferase
GOT1									
16582	GOT1	NM_002079.1	219	tgacgcbaatcgcgcgcgcattgaacc	217995	-	-	-	hyperleucine-isoleucinemia(高ロイシンノロイン 血症)
GOT2									
16583	GOT2	NM_002080.1	199	ttgcctgcgcgcgcgcgcattgaacc	218024	-	-	-	aspartate aminotransferase
TAT									
16584	TAT	NM_000953.1	397	ctgcgcgcgcgcgcgcgcattgaacc	218055	-	-	-	tyrosine aminotransferase
PSAT1									
16585	PSAT1	NM_021154.3	502	atgcctgcgcgcgcgcgcattgaacc	218089	-	-	-	phosphoserine transaminase
OAT									
16586	OAT	NM_000274.1	1233	ggctgcgcgcgcgcgcgcattgaacc	218119	-	-	-	ornithine-oxo-acid aminotransferase
ABAT									
16587	ABAT	NM_000653.2	675	ggctgcgcgcgcgcgcgcattgaacc	218137	-	-	-	keratosis palmoplantaris(点状掌蹠角化症)。 tyrosinosis(チロシン症)
CGBL1									
16588	CGBL1	NM_004059.2	378	ctgcgcgcgcgcgcgcgcattgaacc	218157	-	-	-	grate atrophy of choroid and retina(網膜灰状病 脈脈網膜萎縮)
AADAT									
16589	AADAT	NM_016223.3	452	ctgcgcgcgcgcgcgcgcattgaacc	218167	-	-	-	-

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図46 (続き)

16590	GP72	NM_133443.1	651	gaactatgaagcattctcag	218207	-	see also 9578 line
16591	MGC15875	NM_032921.1	977	agctctctctctggtatcaga	218224	-	-
16592	MGC33309	NM_15241.31	264	agagctctctctggtatctcaga	218242	-	-
16593	PHAG3	NM_032592.1	544	tgatgatctctctggtatctcaga	218260	-	see also 9257 line
16594	SCLY	NM_016510.3	760	tgatgatctctctggtatctcaga	218308	-	-
16595	TALD01	NM_008755.1	618	tgatgatctctctggtatctcaga	218326	-	transaldolase
16596	ALC472	NM_005891.1	895	tgatgatctctctggtatctcaga	218345	-	-
16597	ALC2	NM_033067.1	150	tgatgatctctctggtatctcaga	218363	-	-
16598	C20nt155	NM_019095.3	603	tgatgatctctctggtatctcaga	218381	-	see also 7703 line
16599	CARCL	NM_013276.1	628	tgatgatctctctggtatctcaga	218411	-	kinase related
16600	CASI	NM_022900.3	2012	tgatgatctctctggtatctcaga	218483	-	transfrase
16601	CDSN	NM_001264.2	193	tgatgatctctctggtatctcaga	218513	-	molecular function
16602	ChDn	NM_018371.3	2005	tgatgatctctctggtatctcaga	218559	-	unknown
16603	CHST12	NM_018641.2	1305	ctgagagctctctggtatctcaga	218573	-	see also 7426 line
16604	D4S1-1	NM_130466.2	1193	ctgagagctctctggtatctcaga	218592	-	see also 7534 line
16605	DHDS	NM_024887.1	843	tgatgatctctctggtatctcaga	218594	-	-
16606	FLJ12171	NM_024619.2	131	agagagctctctggtatctcaga	218604	-	see also 8801 line
16607	FN3K	NM_022158.2	110	agagagctctctggtatctcaga	218612	-	kinase related
16608	GAL3ST-4	NM_024637.3	1435	agagagctctctggtatctcaga	218630	-	transfrase
16609	GAL3ST2	NM_030036.1	363	agagagctctctggtatctcaga	218635	-	-
16610	GALGT2	NM_153446.1	245	agagagctctctggtatctcaga	218640	-	see also 8317 line
16611	GALNACT	NM_018590.3	982	agagagctctctggtatctcaga	218663	-	-
16612	GALNT12	NM_024642.2	290	agagagctctctggtatctcaga	218710	-	see also 7528 line
16613	GALNT14	NM_024572.1	461	agagagctctctggtatctcaga	218744	-	see also 8675 line
16614	HSST1	NM_012265.2	714	agagagctctctggtatctcaga	218774	-	-
16615	HSST2	NM_137174.2	421	agagagctctctggtatctcaga	218800	-	see also 5242 line
16616	HSST3	NM_153456.1	960	agagagctctctggtatctcaga	218824	-	see also 9811 line
16617	KOJ0290	NM_015122.1	2026	agagagctctctggtatctcaga	218845	-	see also 9995 line
16618	MA128	NM_013263.3	364	agagagctctctggtatctcaga	218849	-	see also 6256 line
16619	MMAB	NM_022645.1	432	agagagctctctggtatctcaga	218877	-	-
16620	MTFR	NM_024541.1	193	agagagctctctggtatctcaga	218883	-	-
16621	PIGM	NM_145167.1	645	agagagctctctggtatctcaga	218961	-	homocystinuria(ホモシステイン血症)
16622	PNR	NM_003967.1	479	agagagctctctggtatctcaga	219001	-	receptor, activity, gpof,
16623	PTDSS1	NM_014754.1	916	agagagctctctggtatctcaga	219021	-	signal transduction
16624	TBDN100	NM_025065.2	481	agagagctctctggtatctcaga	219044	-	see also 5944 line
16625	TPT	NM_014317.2	1136	agagagctctctggtatctcaga	219145	-	see also 8853 line
16626	WBSOR17	NM_022478.1	256	agagagctctctggtatctcaga	219151	-	-
16627	AKAP28	NM_178613.3	117	agagagctctctggtatctcaga	219169	-	-
16628	ALS2C8	NM_024744.1	1034	agagagctctctggtatctcaga	219196	-	see also 8723 line
16629	C9orf12	NM_022755.3	505	agagagctctctggtatctcaga	219243	-	kinase related

図4.6 (続き)

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16630	ODKRB1B	NM_004064.2	929	ctcaacaggaactgcttctcaat	219267	-	see also 2742 line	-
16631	CINP	NM_032630.2	144	cgactctgttgccacaaatt	219279	-	-	-
16632	DKFZP434	NM_030974.2	1400	agggaacttgagcgctttttcc	219288	-	kinase related	-
16633	DVL3	NM_004423.2	850	gacacagcaacgcgcgaatag	219295	-	kinase related	signal transducer
16634	FLJ12476	NM_022784.1	2062	cggctcttaacttcgactatgrr	219351	-	kinase related	signal transduction
16635	GKAP42	NM_025211.2	402	adgctcagcaactcacttgatctc	219358	-	-	-
16636	HINT3	NM_138571.3	842	fdgactgacttggtctttatc	219394	-	-	-
16637	IKB4AP	NM_003940.2	3701	catctgcgcacagaaactgttat	219479	-	see also 2458 line	-
16638	ITPK1	NM_014219.2	1038	agggcagcgcgcgccttgcaca	219500	-	see also 5540 line	-
16639	LOC114746	NM_173905.1	987	agaaactctgcgcagaaactaac	219513	-	-	-
16640	LOC55971	NM_018642.3	663	aaagcgaacagcactcaaatatg	219531	-	-	-
16641	MAOD	NM_003882.2	212	ctctctcgttacttctgactctc	219557	-	see also 2499 line	-
16642	MAP3K7IP	NM_015093.2	1492	aattgcagcaatggcactaacct	219655	-	see also 6230 line	-
16643	NYO-SP25	NM_003351.6.2	383	gaacgcgttgaggcaactcaaga	219722	-	-	-
16644	P101-P10K	NM_014308.1	1915	ctgttctgagcgcgaactgactgg	219730	-	-	-
16645	PI5RS	NM_018170.2	851	tgttgaagctgctgctgtatgtg	219749	-	kinase related	-
16646	SRP2	NM_005963.2	739	tggacacttgacactcagtatata	219765	-	see also 4182 line	-
16647	STAP2	NM_017720.1	745	tggagcgccttgctgaactatttc	219811	-	kinase related	-
16648	TSK3	NM_021733.1	564	ttagagagactctgactcaaacct	219818	-	-	-
16649	DHRS2	NM_005764.2	1012	ctctctggtctcactcagaact	219829	-	-	-
16650	HSO17B2	NM_002153.1	217	caattactatgtggagcaactattt	219839	-	estradiol 17 beta-dehydrogenase	-
16651	HSO17B3	NM_000197.1	110	tggcgaactctgcttgactctccc	219866	-	estradiol 17 beta-dehydrogenase	-
16652	HSO17B7	NM_016321.1	679	caagtacagacttgaccactttg	219890	-	estradiol 17 beta-dehydrogenase	-
16653	HSO17B8	NM_014234.3	465	tgtctgtctctctctcaaca	219898	-	see also 5551 line	-
16654	H105E3	NM_015922.1	229	aattgcctctgactctattgaca	219901	-	see also 6572 line	-
16655	HSO3B1	NM_000862.1	879	gtgctctacggccactcctatctc	219918	-	steroid delta-isomerase	-
16656	HSO3B2	NM_000198.1	891	gtctcttaaggcccaactatctc	219921	-	transcription co-activator	-
16657	HSO3B7	NM_025193.2	678	cagttgaagcagcagcagctatga	219927	-	adrenal hyperplasia(腎皮質過形成)	-
16658	HSPC106	NM_145168.1	599	gaattgcagcgttgcttaagaaccc	219946	-	-	-
16659	HSO11B1	NM_005525.2	430	agactagactactcactctctca	219964	-	see also 3660 line	-
16660	HADH2	NM_004493.1	459	agggcaacgttggttgctcatctca	219995	-	7-alpha-hydroxysteroid dehydrogenase	-
16661	LDHA	NM_005566.1	146	capaccaccacaaatgaatgac	219998	-	L-lactate dehydrogenase	-

Alzheimer disease(アルツハイマー病)
 exertional myoglobinuria(労作性ミオグロビン尿症)

圖 46 (續上)

[illegible]

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図46 (続き)

16712	CYP46A1	NM_006668.1	1195	ggagcagatgacacactactctga	221259	human cytochromes P450 diolifide oxidoreductase	Alzheimer disease(アルツハイマー病)
16713	FM01	NM_002021.1	753	tggtatcatcaccgaactcttga	221275	—	—
16714	FM03	NM_006894.3	746	ctctctctcaactgcttgagac	221315	—	—
16715	FM04	NM_002021.1	1859	atgtccctctcaactcaactgct	221390	dimethylamine monooxygenase (N-oxide forming)	—
16716	FM05	NM_001461.1	322	cgacttcacccctctcaactgga	221412	—	—
16717	CYP4F8	NM_007253.2	324	tcctcctcgtctgcatcaatccc	221442	human cytochromes P450	—
16718	SOLE	NM_003129.2	1874	ttgtacaagaagctgtctctaat	221490	squalene monooxygenase	—
16719	TYR	NM_000372.2	1330	taaacgatttgagaggtatcaaca	221509	monophenol monooxygenase	oculocutaneous albinism(眼皮膚白皮症)
16720	KMO	NM_003679.1	621	atgggtacatgattgactatt	221539	—	—
16721	CYP2B1	NM_000785.2	1279	ctgttcaactctgtctcaactc	221565	human cytochromes P450	pseudovitamin D deficiency rickets(ブリティッシュ インドネシア性クル病)
16722	CYP2B6A1	NM_000783.2	460	ccctcgaagcactcgaactcctacg	221573	—	—
16723	CYP2G6	NM_000775.2	342	gtgaccctctatcgaggaactct	221597	human cytochromes P450	—
16724	COG6	NM_182476.1	497	ggactatctctgtggaactgctg	221624	—	—
16725	CYP19A1	NM_000103.2	510	gtctcctcgtctcgtctgaag	221658	—	—
16726	CYP1A1	NM_000499.2	1432	gtctctcagacaaaggcttgaagt	221691	—	oral cavity cancers(口腔癌), breast cancer(乳 癌), lung cancer(肺癌)
16727	CYP1A2	NM_000761.2	613	tgcccaacttcgaacctcaactc	221696	CYP1A2 E225I	lung cancer(肺癌)
16728	CYP1B1	NM_000104.2	1887	caattatgctcaactcaactaac	221711	CYP1B1.7	breast cancer(乳癌), glaucoma(緑内障), Peters anomaly(ピーターズ奇形)
16729	CYP2C8	NM_020874.2	595	caaggcctcctggttaatttgg	221717	—	—
16730	CYP2A41	NM_000782.2	1832	ttgacttcctcgaactcaactgaca	221767	—	—
16731	CYP2B8	NM_000767.4	331	ccggaggaatgagtgtgacttgc	221791	human cytochromes P450	lung cancer(肺癌)
16732	CYP2C18	NM_000772.1	973	cgactcctggactcttctgactt	221800	human cytochromes P450	—
16733	CYP2C8	NM_000770.2	314	agggcaatcccaactatctcaaca	221807	—	—
16734	CYP2C9	NM_000771.2	823	aagcacaaccaacctcgaatt	221825	CYP2C9-A*E	Warfarin sensitivity(ワルファリン過敏症), diabetes mellitus(糖尿病), mephenytoin 4- hydroxylase C8 defect(メフェニトイン4ヒドロキシ ラーゼ欠損), diabetes(糖尿病)
16735	CYP2E1	NM_000773.2	423	ctgacacacctccggaactatgg	221831	human cytochromes P450 family	non-hodgkin lymphoma(非ホジキンリンパ腫), excessive alcohol consumption(アルコール依存 症), lung cancer(肺癌), alcoholism(アルコール依 存症)

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図4 (続き)

16738	CYP2F1	NM_000774.3	686	cacccttggagcgaagctgacg	221856	human
16737	CYP2S1	NM_030822.5	648	gattcaactcagcagctctct	221858	cytochromes P450
16738	CYP3A43	NM_022820.3	178	ggagacacattccgctaaacttt	221855	-
16739	CYP3A5	NM_000777.2	971	tcgcagccgacgctcaactcttc	221880	human
16740	CYP4B1	NM_000779.2	1419	gctctcttcgcgttgattgctct	221897	cytochromes P450
16741	CYP4F11	NM_021187.1	452	ctgctctgcaccccaagacatg	221898	human
16742	CYP4F2	NM_001082.3	601	aggctgagtgctctttggatgatg	221906	cytochromes P450
16743	CYP4F3	NM_000896.1	259	cgaggaagagctctctatctacc	221909	human
16744	CYP4X1	NM_178033.1	1364	agagagagagctccgattgatcc	221934	cytochromes P450
16745	CYP51A1	NM_000786.2	1830	caattctctgttcaaacgga	221953	human
16746	FLJ20359	NM_017781.1	94	ggagcttgcagcgttcaagaag	221956	cytochromes P450
16747	FLJ39501	NM_173483.1	745	caagctctctctctgattgctt	221970	-
16748	LOC11612	NM_138784.1	746	tattgatgcgaattgaattct	221986	-
16749	MICAL2	NM_014632.1	326	agacatcaactgcgaagctacc	221991	-
16750	P450RAF-2	NM_019885.2	220	tctctcgcagaggaagattatg	222032	see also 5799 line
16751	PAMC1	NM_005447.2	298	gagctacagcttggatgaaagc	222039	-
16752	TXAS1	NM_001081.2	484	tgtctctgagatgattattctta	222036	signal transduction
16753	TYRP1	NM_000550.1	1517	tgccaacttcggaggaattgctg	222129	see also 651 line
16754	PLD2	NM_000302.2	2194	tgacagctacacgaattaccag	222150	monooxygenase
16755	PLD2	NM_000355.1	878	atgtcatctcaacagctatcata	222187	procollagen-lysine 5-dioxygenase
16756	PLD3	NM_001084.3	849	tctgcccgcagtgpaagctcaag	222234	procollagen-lysine 5-dioxygenase
16757	P4HA1	NM_000917.1	302	agttgatgctgcgaattgctg	222255	see also 593 line
16758	P4HA2	NM_004199.1	1928	ggaggaatcgttgagctactct	222326	procollagen-proline, 2-oxoglutarate-4-dioxygenase
16759	P4HB	NM_000919.2	1397	caggacgctctctgttaccacg	222336	protein disulfide isomerase
16760	LOC57168	NM_020437.3	1147	ggacactctatttggacaattg	222345	-
16761	BBOX1	NM_003966.1	1183	cttcaagctctctgtctctgaag	222389	-
16762	EGN1	NM_022051.1	3902	agacatcgcagcagctgaatg	222389	see also 2723 line
16763	EGN3	NM_022073.2	815	ggacatcctcggattctccaca	222400	-
16764	FLJ10826	NM_018233.1	1189	agacagctctcaacacttaatt	222416	apoptosis
16765	FLJ22222	NM_024648.1	337	aggtctgagagaggaattcttc	222423	-
16766	LEPRE1	NM_022356.2	1458	ctgaagagagaggaattcttga	222450	see also 8344 line

albinism (白児症), xanthism (黄色素異常症)
Ehlers-Danlos syndrome (エーラー-ダンロス症候群)

atherosclerosis (動脈硬化症)

図4G (続き)

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16767	LEPREL2	NM_014262.2	780	gaggccctattaccagttgaagc	222466	-	-	-	-
16768	MLAT4	NM_018192.2	1808	aggtctcgaaggtttgagactc	222507	-	see also 7311 line	-	-
16769	PTGS1	NM_000962.2	567	gaagctaatbactantactac	222527	-	-	-	-
16770	PTGS2	NM_000963.1	1022	caagctatcagagctgcttaaac	222571	-	-	-	lupus erythematosus(丹毒状エリテマトーデス), colorectal cancer(大腸癌), esophageal cancer(食道癌), head and neck cancer(頭頸部癌), colorectal cancers(結腸直腸癌), gastric cancer(胃癌), skin cancer(皮膚癌)
16771	HMOX1	NM_002133.1	408	caaccatgcagcgcctatgaag	222595	-	kinase_related	Rel A homodimer complex	USF43/USF44
16772	HMOX2	NM_002134.2	487	gtgagagcagctccactacatg	222608	-	-	heme oxygenase (deacylating)	-
16773	DAP13	NM_018838.3	368	ctgtctgbaattcatttggaag	222621	-	-	NADH dehydrogenase (ubiquinone)	-
16774	GRIM19	NM_015965.3	323	gcgcagctcgagtagttacactac	222633	-	apoptosis, transcription_regulat or	NADH dehydrogenase (ubiquinone)	-
16775	NDUFA11	NM_175614.1	303	ggagcagcagcagccacaactacg	222642	-	-	-	-
16776	NDUFA2	NM_002488.2	123	gtgagattcgcatccactatagt	222644	-	-	NADH dehydrogenase (ubiquinone)	-
16777	NDUFA6	NM_002490.2	15	ggctccgccaactactactaac	222652	-	see also 1592 line	-	-
16778	NDUFA7	NM_005001.1	168	aagctctccacaactactactatg	222682	-	-	NADH dehydrogenase (ubiquinone)	-
16779	NDUFA8	NM_014222.2	398	tgcacttcattgttttatatcagg	222687	-	-	NADH dehydrogenase (ubiquinone)	-
16780	NDUFA9	NM_005002.3	668	atgcctcgttggttgctcctaac	222689	-	-	NADH dehydrogenase (ubiquinone)	-
16781	NDUFB1	NM_004545.3	280	ctgccttcgggaacagagatag	222703	-	-	NADH dehydrogenase (ubiquinone)	-
16782	NDUFB10	NM_004546.1	376	aagctgaccacgaactatcaac	222711	-	-	NADH dehydrogenase (ubiquinone)	-
16783	NDUFB5	NM_002492.2	391	tggccgtaattttctatagt	222723	-	-	NADH dehydrogenase (ubiquinone)	-
16784	NDUFB6	NM_002493.3	130	gggtbactactcgtggtggaaac	222736	-	-	NADH dehydrogenase (ubiquinone)	-

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16785	NDUF87	NM_004148.4	341	ctcagacaccgcgactatgaa	222740	-	NAOH dehydrogenase (ubiquinone)	-
16786	NDUF88	NM_005004.1	273	atgagagagctcaggtatagc	222741	-	NAOH dehydrogenase (ubiquinone)	-
16787	NDUF89	NM_005005.1	213	gagccggttggaagaacataag	222745	-	NAOH dehydrogenase (ubiquinone)	-
16788	NDUF91	NM_002494.2	68	cgcccttcaagtgcatcaaat	222751	-	NAOH dehydrogenase (ubiquinone)	-
16789	NDUF92	NM_004549.3	310	ttgcatcgccgctctatataat	222761	-	NAOH dehydrogenase (ubiquinone)	-
16790	NDUF91	NM_005006.5	1426	caigtcaagtgcacctcaactaca	222811	-	see also 3489 line	-
16791	NDUF92	NM_004550.3	855	ttaccggtgactatgctcc	222848	-	NAOH dehydrogenase (ubiquinone)	-
16792	NDUF93	NM_004551.1	627	tgactatcttgatbaagtatg	222887	-	iron-sulfur electron transfer	-
16793	NDUF95	NM_004552.1	199	gtcacatgaatcgcttatctct	222899	-	NAOH dehydrogenase (ubiquinone)	-
16794	NDUF96	NM_004553.2	141	agccacactgcgaagttaga	222900	-	iron-sulfur electron transfer	-
16795	NDUF98	NM_002486.1	506	cgggcaccacctatgactatcg	222914	-	NAOH dehydrogenase (ubiquinone)	-
16796	NDUF91	NM_007103.2	322	cgctctctatctatctatctcc	222918	-	see also 4951 line	-
16797	NDUF92	NM_021074.1	599	aggtttgacagctagatgatt	222933	-	iron-sulfur electron transfer	-
16798	NQO1	NM_006903.1	328	aagcccgagccttgcttatcttc	222947	-	Transcription factor JUN-D	Parkinson disease (ノースキンソン病)
16799	NQO2	NM_006904.1	622	ggagcagcgcgcgaagttaga	222971	-	electron reductase	lung cancer (肺癌)
16800	CYB561	NM_001915.2	651	ggcgaagtatagcgcattgagc	222976	-	cytochrome b5 reductase	-
16801	CYB5R2	NM_016229.1	383	agcttttgactaatataaa	222984	-	-	-
16802	DIA1	NM_000398.3	725	aggaactcaggaacaacattct	223005	-	-	-
16803	NCB50R	NM_016230.2	428	agttcatcgttggtcaattat	223015	-	-	-
16804	NNT	NM_012343.2	604	gtcagccctatgcttaactcc	223062	-	-	-
16805	DH0H	NM_014475.2	833	gtcacacgaagaagtatgaagc	223082	-	-	-
16806	POR	NM_000341.1	65	agccttgccgcgaagtatctct	223161	-	-	-
16807	TXNR02	NM_006440.2	1463	agttctatcagcgccttatataa	223183	-	-	-

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18638	ACADSB	NM_001609.2	1109	aagcctcaatgcgaataatct	223919	-	-	electron transfer flavoprotein	-
18639	SRD5A1	NM_001047.1	690	gaagctatttgaactgaact	223941	-	-	electron	pseudohemaphysalitans (慢性半陰陽)
18640	SRD5A2	NM_000348.2	381	ggagaccttatccagctatact	223948	-	see also 290 line	-	-
18641	DHODH	NM_001361.1	313	cctggagacgaattgaagtg	223972	-	see also 924 line	-	-
18642	DPYD	NM_000110.2	807	ctgcgcatattgaattgaatt	224006	-	see also 93 line	-	-
18643	SDHC	NM_003001.2	141	gacgcgtctgggaagaatgat	224072	-	-	succinate dehydrogenase	paraganglioma (傍神経節腫)
18644	ACOX1	NM_004035.4	1714	aagcctacacgaagcaataaac	224112	-	-	-	pseudonatal adrenoleukodystrophy (傍性新生児副腎臓白質シストロー)
18645	ACOX2	NM_003500.1	1845	ttgataactacgagagctctct	224192	-	see also 2359 line	-	-
18646	ACOX3	NM_003501.1	553	aagccacagcagtaataccaag	224161	-	-	electron transfer flavoprotein	-
18647	OPO	NM_000997.3	781	gggctggctgtctgtatcaacc	224183	-	-	coproporphyrinogen oxidase	harderoporphyria (ポルフィリン尿症、coproporphyrin (コプロポルフィリン) 症)
18648	FLJ11164	NM_018346.1	500	agggttatacaggtgtctatag	224204	-	-	-	-
18649	PPOX	NM_000309.1	1109	gggctgacacgattattatgc	224221	-	-	protoporphyrinogen oxidase	-
18650	BLVRA	NM_000712.3	657	gagcgaagaagcagtcagtaag	224233	-	-	electron	porphyria (ポルフィリン) 症、diabetes (糖尿病)
18651	BLVRB	NM_000713.1	176	gcggcgcaagcagcttaccgaag	224247	-	-	biliverdin reductase	-
18652	DECRI	NM_001359.1	267	aagcagtgctaccacataatag	224255	-	see also 923 line	-	-
18653	SDHB	NM_003000.1	544	aggatctttctccagtttgc	224297	-	-	succinate dehydrogenase (ubiquinone)	paraganglioma (傍神経節腫)
18654	FADS1	NM_013402.3	1351	cgagatcatcatcactactaaag	224311	-	-	C-5 sterol desaturase	placochromocytoma (褐色細胞腫)
18655	SC5DL	NM_006918.2	263	aatccctcagagagatgaattt	224324	-	-	-	-
18656	TD02	NM_006651.1	1092	ttgtctctccagctatactac	224376	-	see also 3920 line	-	-
18657	HPD	NM_002150.2	327	ttgccttcaggtggagagattgt	224398	-	-	4-hydroxyphenylpyruvate dioxygenase	-
18658	INDO	NM_002164.3	1143	gagctacatcttcgaactctgga	224422	-	-	indoleamine-pyruole 2, 3-	-
18659	HGD	NM_000187.1	317	tttccacagggagccacaaaga	224429	-	-	homogentisate 1, 2-dioxygenase	alkatonuria (アルカプトン尿症)
18660	CD01	NM_001901.1	422	caggtatcccgaaactttgttc	224458	-	-	electron	Parkinson disease (パーキンソン病)
18661	BCD01	NM_017429.1	1623	gagatgacagctaatctcttc	224499	-	see also 7003 line	-	-
18662	BCD02	NM_001938.1	951	gttatacagcggtttcatgttc	224539	-	see also 9058 line	-	-
18663	FLJ32115	NM_152321.1	473	gggttttcaacacgctaatca	224572	-	-	-	-
18664	TMLHE	NM_018196.1	1029	tttctattgaagcagtaataat	224602	-	see also 7312 line	-	-
18665	ALDR1	NM_017584.4	842	aggcctcatctgacagctatgc	224612	-	-	-	-
18666	ERP70	NM_004911.3	525	aagcagtttctctcgggaatga	224622	-	-	protein disulfide isomerase	-

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16867	P5	NM_005742.2	221	tgaattactcatcgaatttc	224650	-	-	protein disulfide isomerase	-
16868	PDJP	NM_006849.1	1137	ttggatcagcgcgaattgaaga	224680	-	-	protein disulfide isomerase	-
16869	PDJR	NM_006810.1	1105	cgaggtttctactggtgaagtat	224708	-	-	see also 4785 line	-
16870	TXN	NM_003329.1	106	ttgaagctcgaagtggaact	224717	-	-	signal transduction	-
16871	TXN2	NM_012473.3	270	cgagtgactcgaactcaaga	224722	-	-	electron	-
16872	TXNL	NM_004786.1	271	cgagctgcctgctcgaattca	224727	-	-	see also 3300 line	-
16873	AMID	NM_032797.4	867	atgaatatacgaagctatcaaa	224761	-	-	see also 9385 line	-
16874	FLJ22028	NM_024854.1	332	ttccaatcacacgactatcaaga	224772	-	-	-	-
16875	FLJ23322	NM_024955.4	1213	ttccaatcacacgactatcaaga	224798	-	-	-	-
16876	FLJ30473	NM_144704.1	1681	ttccaatcacacgactatcaaga	224821	-	-	-	-
16877	MT01	NM_012123.1	1097	gcgcttcgacgcgcgaactgct	224845	-	-	-	-
16878	PD0D8	NM_004208.2	1484	ctgaagcttcctatgctatcaag	224934	-	-	see also 2816 line	-
16879	SORDL	NM_021199.1	479	aagatctctccacgactatctat	224939	-	-	-	-
16880	ALDH1A2	NM_003888.2	361	aaggggacgtctctgctgaagc	225006	-	-	-	-
16881	ALDH2	NM_000690.2	1843	gttggatcaactgctatgatgt	225053	-	-	electron transporter	colorectal cancer(大腸癌), alcohol abuse inhibitory factor(アルコール乱用抑制因子), uterine leiomyoma(子宮平滑筋瘤), alcoholism(アルコール依存症), colorectal cancer(結腸直腸癌)
16882	ALDH3A2	NM_000382.1	911	ctgcattgcacccgactatcttc	225071	-	-	aldehyde dehydrogenase (NAD+)	Sjogren-Larsson syndrome(Sjogren-Larsson症候群)
16883	ALDH4A1	NM_003748.2	733	ggccaactgctctatggaagc	225098	-	-	aldehyde dehydrogenase (NAD+)	hyperproliferemia(高プロリン血症)
16884	ALDH7A1	NM_001182.1	1056	atgggaccctaaagtctctctatg	225117	-	-	aldehyde dehydrogenase (NAD+)	-
16885	ALDH9A1	NM_000696.2	781	cgagtgctgctgttgcttatacc	225155	-	-	electron	-
16886	ALDH1A3	NM_000693.1	460	ctgtattagaacccctcagatact	225202	-	-	aldehyde dehydrogenase (NAD(P)+)	-
16887	ALDH3A1	NM_000691.3	1146	catcaacgacgaagtgattgaaga	225237	-	-	electron	-
16888	ALDH3B2	NM_000695.2	421	acgttcacgaaccccttctcaga	225240	-	-	aldehyde dehydrogenase (NAD(P)+)	-
16889	GAPDS	NM_014364.3	704	ctgctctcatgaacactgctgagc	225249	-	-	glyceraldehyde 3-phosphate dehydrogenase (phosphorylating)	-
16890	ALDH5A1	NM_001080.3	1124	aagaaactctgctgctgctgctgct	225278	-	-	-	-
16891	ALDH6A1	NM_005985.2	843	ttggctgctatccgcatcaag	225320	-	-	see also 3850 line	-
16892	PDH41	NM_000284.1	1042	aagagtgacccctatttctctct	225349	-	-	pyruvate dehydrogenase (lipoamide)	-

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16893	POHA2	NM_005390.3	860	cagatgcgcgaactttcaat	225370	-	-	-	-
16894	PDHB	NM_000925.1	115	gtcagcgtctgctgctataaa	225382	-	see also 802 line	-	-
16895	BCKDHA	NM_000709.2	195	gggcctgcgcgaattataga	225409	-	see also 434 line	-	-
16896	BCKDHB	NM_000056.2	233	ccggaatgacggcaactcaga	225434	-	-	3-methyl-2-oxobutanate dehydrogenase (lipoamide)	maple syrup urine disease(メーブルシロップ原症)
16897	DHFKD1	NM_018706.4	1314	caatttcgcgaagtatttat	225522	-	-	-	-
16898	FLJ10851	NM_018245.1	2978	gcrcacacggcccaattatgagtg	225581	-	-	-	-
16899	COX11	NM_004373.2	270	aaagctcgaaccccttccacag	225585	-	-	electron	-
16900	COX15	NM_004376.3	378	ctgcctctctgctgagtagtgg	225587	-	-	-	-
16901	COX4B	NM_032609.2	442	caagcggctcactgattctcc	225609	-	-	cbbs-type cytochrome c oxidase	-
16902	COX5A	NM_004255.2	297	cgagcgtgcgagcgtttaaaga	225624	-	-	electron	-
16903	COX5B	NM_001862.2	134	tgggttcctcactgatgaagagc	225630	-	-	cbbs-type cytochrome c oxidase	-
16904	COX6B	NM_001863.3	296	ccgtcaagaggcgcatctct	225638	-	-	cbbs-type cytochrome c oxidase	-
16905	COX6C	NM_004374.2	108	cagcgcctcgcgaattctatgg	225638	-	-	cbbs-type cytochrome c oxidase	leiomyoma(血管筋腫)
16906	COX7A2L	NM_004718.2	171	ttgcacccaactaaactgacc	225646	-	-	electron	-
16907	COX7A3	NM_183003.1	263	cagcaatcaacttggtcaccttc	225655	-	-	-	-
16908	COX7B	NM_001866.2	247	tggacatatgtagcaacaact	225660	-	-	cbbs-type cytochrome c oxidase	-
16909	COX7C	NM_001867.2	191	tgtgtgtctactagcaagatgt	225664	-	-	cbbs-type cytochrome c oxidase	-
16910	OYB5	NM_001914.1	98	aggttcacgatgttgcacaatt	225672	-	-	cytochrome c oxidase	methemoglobinemia(メトヘモグロビン血症)
16911	SURP1	NM_003179.2	748	cagcgcgcagggccactctcatt	225680	-	-	cytochrome c oxidase	-
16912	FLJ13852	NM_023078.1	735	ccggtttgcacacacatctatgg	225688	-	-	-	-
16913	LOC12294	NM_138791.1	562	ttgcgctctcagatgactatgag	225705	-	-	-	-
16914	P5OR2	NM_013328.2	228	ctctgtgctccagatagatagc	225712	-	see also 5400 line	-	-
16915	QDPR	NM_000320.1	789	acggaactcaccgccagcatatt	225737	-	see also 267 line	-	-
16916	PRODH	NM_016335.2	503	taggacagaagctctctcacaag	225740	-	-	proline dehydrogenase	hyperprolinemia(高プロリン血症)、schizophrenia(精神分裂病)
16917	PRODH2	NM_021232.1	1147	aaagcttgcagtggttcattctct	225752	-	-	-	-
16918	ETDHD	NM_004453.1	1717	caagcggcgaactaaacttaag	225801	-	see also 2985 line	-	-

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18919	PIPOX	NM.016518.1	477	ccggagagatttccttcgataat	225817	-	see also 6593 line			
18920	MAOA	NM.000240.2	972	atcagtcgaatacactaat	225842	-		amine oxidase (flavin-containing)	alcoholism(アルコール依存症)	
18921	MAOB	NM.000688.3	319	tgagacatacagcagcagctat	225858	-	see also 583 line			
18922	PNPO	NM.018129.1	781	ctcagtcgagcagcttcctg	225925	-	see also 7270 line			
18923	DAO	NM.000170.1	537	tgctccatacagcagcagctat	225929	-	see also 1221 line			
18924	GLDC	NM.000170.1	401	tgctccagcagctgaatgctc	225947	-	see also 142 line			
18925	MEGF11	NM.032445.1	2930	aaagagcttgcttcgatacctcc	226015	-		PALNuclear respiratory factor-		
18926	QP-O	NM.011402.2	177	tcgcatttcctccagcttgtag	226023	-		ubiquinol- 1-1		
18927	UOCR	NM.006830.2	73	gggtcccgagcgctctacacatgg	226029	-		cytochrome c reductase		
18928	UQCRFS1	NM.006003.1	888	caatcaacgatactggtgctg	226041	-		ubiquinol-		
18929	AKR1B10	NM.020269.3	1155	gggcctgaacattctgcaatcc	226043	-		cytochrome c reductase		
18930	PCYOX1	NM.012957.2	594	atccttaatacgaacactcttga	226070	-		electron		
18931	MSRA	NM.012331.2	496	ttgcagagagctatacttcaaat	226113	-		protein-		
18932	RRM1	NM.001033.2	1880	caaggcccatcagaacactatga	226213	-	see also 631 line	methionine-S-		
18933	RRM2	NM.001034.1	1222	tgaggaacccattgaacttttgg	226224	-	see also 632 line			
18934	RRM2B	NM.015713.2	264	caagggaacccattgaacttttga	226230	-				
18935	MDGA1	NM.153487.2	1456	ctgcctcctgcagctgctgacag	226256	-				
18936	FDXR	NM.004110.2	553	ctggagacacagcagctgcttgg	226260	-				
18937	SCANOL	NM.005745.2	731	gggcctgagtgatgcattcgttta	226300	-		C-4 methyl sterol oxidase		
18938	AKR1D1	NM.005869.1	942	aaagcctgcttgctggaatcc	226324	-	see also 4183 line			
18939	ALDH1B1	NM.000692.3	718	aggcaacaccttgctgtatgaag	226341	-		aldehyde dehydrogenase (NAD+)		
18940	ALDH8A1	NM.022568.2	1283	aagatccaacacaccttgaatg	226375	-	see also 8421 line			
18941	AMAOR	NM.014324.3	439	ccggttagcttgctcagctgatca	226382	-		alpha-methylacyl- CoA racemase		
18942	C10orf33	NM.032709.1	102	cgctcttgagacaggaataacagc	226404	-				
18943	GED-6	NM.016315.1	636	gttgaggttgaataatacttatta	226435	-	see also 6804 line			
18944	CHDH	NM.018397.1	1489	gaattctggcctgctcaaacctga	226455	-	see also 7439 line			
18945	ORYL1	NM.015974.1	449	atcagtcgagctgcttcgaatg	226471	-		oxidoreductase, acting on CH-OH group of donors		
18946	CYB5R1	NM.016243.1	381	aagagcttgccaccgaactttcc	226481	-				
18947	CYBB	NM.000397.2	96	tgatatacctggattttgataat	226497	-	see also 319 line			
18948	DCXR	NM.016286.1	386	caaggacacaccttggaagctcc	226537	-				

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16949	DHCR2	NM 020664.3	576	gaagcgtatcagctgaacatcact	226545	-	-	-	-	-
16950	DHCR24	NM 014762.1	1421	ggagacgcctctgagaaacttt	226564	-	-	see also 5948 line	-	-
16951	DHCR7	NM 001360.1	605	agagctctcaaacagctcaga	226570	-	-	-	Smith-Lemli-Opitz syndrome (Smith-Lemli-Opitz 症候群)	-
16952	DHRS1	NM 139452.1	531	gtctcctctcaaacagctcaga	226578	-	-	oxidoreductase	-	-
16953	DHRS10	NM 018246.1	536	agctgcctcgcgcctcactcgc	226586	-	-	-	-	-
16954	DHRS7	NM 016029.1	163	acgcgcgcgcgcgcctcactcgc	226600	-	-	-	-	-
16955	DHRS8	NM 016245.1	553	gtctcctctcaaacagctcaga	226632	-	-	-	-	-
16956	DHRS9	NM 005771.3	2098	gtgcgcctctcagctcagcaac	226660	-	-	see also 4028 line	-	-
16957	DHRSX	NM 145177.1	134	ctgacccctgtgcctatctgacg	226666	-	-	-	-	-
DKFZp566										
16958	0084	NM 015510.3	426	gaactctctgacacactctgtca	226678	-	-	-	-	-
16959	ERO1LB	NM 019891.2	944	aaactctctgacacactctgtca	226709	-	-	see also 7147 line	-	-
16960	FADS2	NM 004265.2	1041	ctctggcctcagctcactcactcc	226739	-	-	see also 2865 line	-	-
16961	FADS3	NM 021727.3	973	ctctgcacactctgagactcttga	226747	-	-	-	-	-
16962	FLJ11042	NM 018308.1	220	ctgacccctctgagactcagctt	226764	-	-	-	-	-
16963	FLJ11577	NM 025159.1	1092	tagccgcctcttgcaacttgct	226786	-	-	-	-	-
16964	FLJ12661	NM 025138.2	1471	tgctacactcagcgaactcctca	226800	-	-	-	-	-
16965	FLJ20643	NM 017916.1	359	caagcaagatcagcacaactcc	226853	-	-	-	-	-
16966	PVT1	NM 002035.1	804	ttgagactcagctcattctaga	226878	-	-	receptor_activity, ligand, signal transduction	oxidoreductase	follicular lymphoma (濾胞性リンパ腫)
FZD7										
16967	FZD7	NM 003507.1	1348	ctttctgtctactctctctcagc	226932	-	-	frizzled receptor	-	-
16968	GMP	NM 015573.1	1769	gtcacagctcagctcagcaaac	226904	-	-	-	-	-
16969	H17	NM 017547.2	337	tgagcagcagcagctcagctca	226914	-	-	see also 7028 line	-	-
16970	HSD17B12	NM 016142.1	473	gtgagcagcagcagctcagctca	226943	-	-	-	-	-
16971	KIAA0769	NM 014924.1	1843	gtgagcagcagcagctcagctca	227028	-	-	see also 6028 line	-	-
16972	KREMEN2	NM 024507.2	926	gtgagcagcagcagctcagctca	227037	-	-	signal transduction	-	-
16973	USCH17	NM 015925.3	1890	agctctcagcagcagctcagct	227041	-	-	see also 6573 line	-	-
16974	LOC28398	NM 176128.2	1111	ctgtcgtctcagcagctcagct	227053	-	-	-	-	-
16975	MANBP	NM 022126.1	577	tgctgggcagcagcagcttgc	227062	-	-	oxidoreductase	-	-
16976	MGC10204	NM 153329.2	1616	ctgcgcgcagcagcagcttgc	227073	-	-	-	-	-
16977	MGC11335	NM 030819.2	651	caactgatttcagcagcagctgc	227079	-	-	-	-	-
16978	MGC157633	NM 133681.1	496	agcctctcagcagcagctgc	227085	-	-	-	-	-
16979	MGC33280	NM 144683.2	504	ccgcgcgcagcagcagctgc	227111	-	-	-	-	-
16980	MGC4172	NM 024306.2	554	atctctgcacccagcagctgc	227134	-	-	-	-	-
16981	NRX-S30	NM 016640.2	537	gcgcgcagcagcagctgc	227143	-	-	see also 6964 line	-	-
16982	NRX3	NM 015718.1	1654	caactgatttcagcagctgc	227201	-	-	see also 6541 line	-	-
16983	NR1	NM 014434.1	1773	ccgcgcagcagcagctgc	227216	-	-	apoptosis	-	-
16984	PEOR	NM 018441.2	333	tgctcagcagcagcagctgc	227262	-	-	-	-	-
16985	PHYH	NM 005214.2	908	caactgcagcagcagctgc	227276	-	-	oxidoreductase	-	Refsum disease (レフサム症候群)
16986	RDH-E2	NM 138969.2	985	tgctcagcagcagcagctgc	227290	-	-	-	-	-
16987	RDH10	NM 172037.1	978	tgcttcagcagcagcagctgc	227312	-	-	see also 10033 line	-	-
16988	RDH11	NM 016026.2	709	tgcttcagcagcagcagctgc	227336	-	-	see also 6626 line	-	-

16890	RDH12	NM_152443.1	1088	cagctctgaactctcagaactcc	227332	-	-	-	-
16890	RDH13	NM_138412.2	1117	aatttacttoatkaactcaacaa	227363	-	-	-	-
16891	RDH14	NM_020905.1	804	tgattatttaccgaactctgag	227376	-	-	-	-
16892	RDH4	NM_003725.2	933	atctatctgcgaactcactgac	227386	-	-	-	-
16893	SCDF9	NM_178135.2	340	gaatctatctcctcaactaa	227413	-	-	-	-
16894	SDR-O	NM_148897.1	696	caactcagaagagagattctcc	227440	-	-	-	-
16895	SELO	NM_031454.1	737	atctccacatctctatctatg	227447	-	-	-	-
16896	SEPW1	NM_003009.1	212	atgacacgcaggatattatcat	227458	-	-	-	-
16897	SHREW1	NM_018836.2	447	aaacacacgcagagacagctag	227481	-	-	-	-
16898	SLC5G2	NM_015945.1	638	ccgtctcgtcgtcactatgacc	227473	-	-	-	-
16899	TWYF2	NM_002473.1	938	tcgcgtgcgtatcctatgaacg	227484	-	-	-	-
17000	TSTA3	NM_005313.2	59	caggatcatatcggtgattcagt	227488	-	-	-	-
17001	ANAPC2	NM_013866.2	1485	agccgtctctcagactcactaa	227506	-	-	-	-
17002	ANAPC4	NM_013367.1	503	tgagacgctcagactcaattatt	227519	-	-	-	-
17003	ANAPC5	NM_018237.3	2183	cgtccatcagagcgtcttactt	227626	-	-	-	-
17004	APC10	NM_014885.1	245	cttttgctctcctcactctgc	227629	-	-	-	-
17005	G14orf130	NM_018108.2	1092	agagacgctccctcaatgagctac	227657	-	-	-	-
17006	C6orf133	NM_015255.1	801	tgactgtagctctctcgatctag	227687	-	-	-	-
17007	ODC34	NM_004359.1	294	tgatgacagagcgcatctatac	227832	-	-	-	-
17008	CEB1	NM_016323.1	369	cggacgcgcaaatgcatataatt	227839	-	-	-	-
17009	DD5	NM_015902.3	4528	cttgctatctatcagcatagctgc	228044	-	-	-	-
17010	DKFZP564					-	-	-	-
17010	G992	NM_015601.2	3172	caattgattatctcctctctatt	228245	-	-	-	-
17011	E2-230K	NM_022066.2	2002	cttcaaccccgactcttttgcttc	228373	-	-	-	-
17012	FBXL3A	NM_012158.1	817	ctctctctcttgaatgataaga	228320	-	-	-	-
17013	FBXL3B	NM_012159.1	1029	ctctctcgtcgtatgattgtag	228376	-	-	-	-
17014	FBXL5	NM_012161.2	1438	ctgttgacacgattaaacacaa	228413	-	-	-	-
17015	FBXL6	NM_012162.1	946	cggctcaacgcctaaagacatc	228426	-	-	-	-
17016	FBXL7	NM_012304.3	1707	tgcgcaaatccctttgttatcc	228438	-	-	-	-
17017	FBXL11	NM_012167.1	1539	atggaattctctaatatgagcc	228479	-	-	-	-
17018	FBX02	NM_012168.2	824	acgatgataactctcaagaatcac	228529	-	-	-	-
17019	FBX021	NM_015002.1	841	tgagatcagatgagcttctctata	228553	-	-	-	-
17020	FBX024	NM_012172.2	774	gttcaacagtttccctttaaatac	228576	-	-	-	-
17021	FBX03	NM_012175.2	1101	caagttcggttatatgataacaca	228624	-	-	-	-
17022	FBX04	NM_012176.1	828	atgttgatctgacaacaaagaag	228650	-	-	-	-
17023	FBX05	NM_012177.2	171	tcgaccttcgtagtttttaag	228662	-	-	-	-
17024	FBX07	NM_012179.2	519	atcacctctcagcgcctaaataa	228713	-	-	-	-
17025	FBX09	NM_012347.2	832	cgacctcttctcgtttgattgag	228769	-	-	-	-
17026	FBXW1B	NM_012300.1	1373	agagatctcctctgtttattgag	228817	-	-	-	-

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17027	FLJ11011	NM_018298.1	367	aaagacagacacccagcgaatc	228883	-	transcription_regulat	-
17028	FLJ13855	NM_023079.2	943	ttatctctcggagcctgataacg	228881	-	or	-
17029	FLJ25157	NM_025653.1	681	cagctcctccagcctgacatacga	228882	-	see also 8548 line	-
17030	FIS	NM_022476.1	855	aaagcccttcacatcagcttt	228917	-	-	-
17031	HA0E1	NM_020771.2	2456	gattcagctccagcctcttaccga	228953	-	see also 7947 line	-
17032	HEG1D1	NM_015382.1	2829	agctctcagatattatcacatga	228983	-	receptor activity	-
17033	HERG1	NM_003922.1	1203	ttgcctcatctctcagagactaac	228952	-	-	cowden disease(外毛細胞瘤, leukemiac(白血病))
17034	HERG2	NM_004867.2	13290	ggcgcgctcttcgaaagctagt	2289707	-	see also 3188 line	-
17035	HERG3	NM_014806.1	2550	gtgcagctctctctcactctac	228972	-	see also 5769 line	-
17036	HIF2	NM_005339.3	387	atctactctccagcagctattt	2289824	-	see also 3728 line	-
17037	HSPC150	NM_014766.1	226	ctcagctcctaatactta ggtg	228842	-	see also 5925 line	-
17038	ITOH	NM_031483.3	1059	gacgcagcggcgcgttactctgt	228881	-	-	-
17039	KIAA0010	NM_014671.1	3151	gattgctctcgaattgtttatcga	230017	-	see also 5849 line	-
17040	KIAA0317	NM_014821.1	1814	gagagcttcgcagcttaccatag	230065	-	see also 6017 line	-
17041	KIAA0322	NM_015052.1	4507	ctcgtgtgagcgtctctaataat	230151	-	see also 6210 line	-
17042	LOC51619	NM_015983.2	468	aggcgcagacagaaagatcaac	230161	-	-	-
17043	LOC92912	NM_173469.1	1257	gagcccaacatctctaattcc	230173	-	-	-
17044	MGC35130	NM_152489.1	381	caatttcacagatattactctc	230180	-	-	-
17045	NCE2	NM_080878.1	348	aattctccagtgatgatacaatg	230202	-	-	-
17046	NEDD4	NM_006154.1	798	aaagcaacatctcaattaccacg	230224	-	see also 4260 line	-
17047	RBAFR00	NM_020765.1	13901	tgtgtgagcagcttcaaacctac	230724	-	-	-
17048	SMURF1	NM_020429.1	1549	agagctcttcccccacataatg	230786	-	see also 7871 line	-
17049	SMURF2	NM_022739.2	2267	aggcgcagacatcttaccctaac	230883	-	transcription_regulat	ubiquitin-protein
17050	TBP12	NM_004238.1	4552	cagctgatactctatctctgt	230994	-	or	ligase
17051	UBE2A	NM_003336.2	591	aaagctcttcgcatagctaga	231075	-	see also 2828 line	-
17052	UBE2B	NM_003337.2	448	cagcttccagcagcttaccaga	231078	-	see also 2257 line	-
17053	UBE2D1	NM_003336.3	985	cagatattgcacaaatctatata	231113	-	see also 2258 line	-
17054	UBE2D2	NM_003339.2	903	tgtctctcagcactaactatctc	231119	-	ubiquitin-protein	ligase
17055	UBE2E1	NM_003341.3	509	aggttcatcttgacacgaatc	231134	-	ubiquitin-protein	ligase
17056	UBE2G1	NM_003342.3	470	ccgtgtggagctcagcttaatg	231144	-	see also 2259 line	-
17057	UBE2G2	NM_003343.4	329	atggagagcttcgattctcctc	231160	-	-	-
17058	UBE2H	NM_003344.2	428	gatttaaacatgagtgactacatcc	231162	-	-	-
17059	UBE2I	NM_003345.3	540	caaaagctcagacagcttactctc	231193	-	-	-
17060	UBE2J1	NM_016021.2	353	aaagatccgctcttaaacgtttt	231195	-	see also 6622 line	-
17061	UBE2J2	NM_058167.2	671	cttaactctgtggagattaaa	231242	-	-	-
17062	UBE2L6	NM_004223.3	331	gtctacagacagacagacatttg	231249	-	ubiquitin-protein	ligase
17063	UBE2R2	NM_017811.2	804	gtttcttccagcagcttgatga	231308	-	see also 7156 line	-
17064	UBE2V2	NM_003350.2	242	caaaagctctctcgcagctatga	231316	-	cell cycle	-
17065	UBE3A	NM_000462.2	1577	aaagtgtgagcagacatcatata	231363	-	see also 364 line	-

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17066	UBE3B	NM_130466.2	3303	taccgagctccctccatctca	231466	-	-	see also 9545 line
17067	UBR1	NM_174916.1	3834	tcccttgatccctccatctca	231593	-	-	see also 10125 line
17068	C6orf104	NM_031949.2	611	tgccatccctccatctca	231643	-	-	-
17069	FLJ35608	NM_173623.1	593	ttgagagctccatctca	231682	-	-	-
17070	FLJ35119	NM_152254.1	869	ttgatgaaccagatctgagc	231709	-	-	-
17071	KIAA0153	NM_015140.1	1449	ccagcttgctccatctca	231715	-	-	-
17072	KIAA0173	NM_014640.1	1342	ttggaacccctccatctca	231734	-	-	-
17073	KIAA0998	NM_015072.2	111	atgtgcctccatctca	231766	-	-	-
17074	LOC10613	NM_194252.1	1357	atgacccagagctgctgaaa	231855	-	-	-
17075	TTL	NM_153712.2	808	ttgtgctccatctca	231878	-	-	see also 10017 line
17076	TTL1	NM_012283.2	1152	atctgctccatctca	231903	-	-	tubulinyl-tyrosine ligase
17077	GOLC	NM_001488.1	1824	agagagctccatctca	231958	-	-	see also 1027 line
17078	GOLM	NM_002008.1	372	gcagagctccatctca	231964	-	-	translation
17079	PAICS	NM_006452.2	264	aagctccatctca	231985	-	-	malignant mesothelioma (癌性中皮腫)
17080	MCCO2	NM_022132.3	1189	gggtaccatctgctgctgctg	232027	-	-	methylcrotonylglycinuria (メチルクロニルグリシン尿症)
17081	PCOB	NM_000532.2	403	agcccgatctgagctgctg	232047	-	-	propionyl-CoA carboxylase
17082	GTPS	NM_001905.1	457	caagcctgctgctgctgctg	232082	-	-	see also 1218 line
17083	GTPS2	NM_019857.3	1688	caagcctgctgagctgctg	232140	-	-	see also 7140 line
17084	HCS	NM_000411.3	1617	caagcctgctgctgctgctg	232152	-	-	see also 325 line
17085	ASNS	NM_001873.2	814	ctgctccctccatctca	232190	-	-	-
17086	LIAS	NM_008859.2	842	cgctccatctgctgctgctg	232213	-	-	-
17087	GLUL	NM_002065.3	885	caagctgctgctgctgctg	232238	-	-	glutamate-ammonia ligase
17088	GLUL1	NM_016571.1	1126	ctcccgagctccatctca	232281	-	-	Alzheimer disease (アルツハイマー病)
17089	HAL	NM_027108.2	1134	ctgctgctgctgctgctg	232319	-	-	see also 6919 line
17090	BCL7C	NM_004765.2	248	ctgctgctgctgctgctg	232340	-	-	see also 1395 line
17091	RG1	NM_005172.2	302	cgctccatctgctgctgctg	232346	-	-	see also 4030 line
17092	SLC27A2	NM_003645.2	669	ctgctgctgctgctgctg	232375	-	-	long-chain-fatty-acid-CoA-ligase
17093	SLC27A5	NM_017254.1	1639	ctgctgctgctgctgctg	232432	-	-	-
17094	SLC27A6	NM_014031.1	1683	ctgctgctgctgctgctg	232474	-	-	-
17095	SUC1A2	NM_003850.1	1107	ttgtgctgctgctgctgctg	232516	-	-	succinate-CoA ligase (ADP-forming)
17096	ACAS2L	NM_032501.2	1879	ttgtgctgctgctgctgctg	232532	-	-	see also 9222 line
17097	AACS	NM_022892.2	281	ttgtgctgctgctgctgctg	232546	-	-	-
17098	BIRC6	NM_016252.1	3629	ttgtgctgctgctgctgctg	232678	-	-	see also 6755 line
17099	BTRC	NM_003939.2	1527	ttgtgctgctgctgctgctg	233052	-	-	see also 2866 line
17100	C2orf418	NM_004622.2	1543	tgagctgctgctgctgctg	233063	-	-	-
17101	GGCX	NM_000821.2	1297	ttgtgctgctgctgctgctg	233192	-	-	Alzheimer disease (アルツハイマー病)

17102	MOCS3	NM_015929.2	1176	tgcttcacatggaactacatga	233218	-	-	-	-	-
17103	MOCS3	NM_014484.3	257	ggagacacctctgctactatcg	233257	-	-	-	-	ligase
17104	PARC	NM_015089.1	6871	atcgactctgacactataatga	233344	-	-	-	-	-
17105	RNF25	NM_02453.2	855	atcgaggaacgacatcatctac	233359	-	-	-	-	see also 8361 line
17106	UBE1	NM_003334.2	378	ggctctgaacgcctctagaaca	233389	-	-	-	-	-
17107	UBE1L	NM_003335.2	913	ttctctctgagctctctctctga	233413	-	-	-	-	ubiquitin conjugating
17108	CLONE249	NM_152260.1	960	ctctaaagacacattcttgctg	233438	-	-	-	-	-
17109	22	NM_015678.1	349	cgagctctctacgatactgaca	233451	-	-	-	-	-
17110	FLJ14494	NM_037795.1	216	cgctgagatctgcaagataatg	233463	-	-	-	-	-
17111	PUS1	NM_025215.3	534	atctctgctctctcaattcaaa	233472	-	-	-	-	pseudouridylyate synthase
17112	TRUB1	NM_131669.3	901	ggagacattctgctctgagacac	233500	-	-	-	-	-
17113	ECHT	NM_001398.1	208	actctctgagaaacatctctct	233509	-	-	-	-	isomerase
17114	ECHS1	NM_004092.2	555	cgccggagatctctaatgagac	233522	-	-	-	-	see also 2760 line
17115	UROS	NM_000375.1	832	tggtgacatctatgatcaaatga	233537	-	-	-	-	uroporphyrinogen -III synthase
17116	ALAD	NM_000031.3	731	atgagctctcagtgcaaatctgc	233541	-	-	-	-	porphobilinogen synthase
17117	FH	NM_000143.2	720	aagatgagctgactctactctca	233567	-	-	-	-	porphyria(ポルフィリン症), diabetes(糖尿病)
17118	OBS	NM_000071.1	1093	aggatctgctgactgctctctctc	233582	-	-	-	-	see also 128 line
17119	TGDS	NM_014305.1	925	cgctctctctgagaaactataaa	233602	-	-	-	-	see also 46 line
17120	GMDS	NM_001500.1	465	tgacactctgactgctctctctg	233624	-	-	-	-	see also 1030 line
17121	FLJ31300	NM_144639.1	1311	gattctgacacctctctctatgt	233666	-	-	-	-	urocanate magnesium binding
17122	PTS	NM_000317.1	130	gcgcagccacgcagctttatcagt	233671	-	-	-	-	hyperphenylalaninemia(高フェニルアラニン血症)
17123	ODC-P	NM_052988.2	1550	ggactctctctggatctctctctct	233698	-	-	-	-	-
17124	ODC1	NM_052539.1	1535	cgagacacgcagctctctctctct	233735	-	-	-	-	translation
17125	GAD1	NM_000817.1	1118	tgctctctctctgctgctctatgt	233749	-	-	-	-	see also 515 line
17126	GAD2	NM_000818.1	1678	tgctctctctctgagacatctga	233816	-	-	-	-	see also 516 line
17127	UROD	NM_000374.2	790	atgactctctctgcaagatctg	233828	-	-	-	-	porphyria cutanea tarda(慢性性皮膚ポルフィリン症), diabetes(糖尿病), porphyria(ポルフィリン症), porphyria heparatoerythropoietic(肝造血性ポルフィリン症)
17128	HDC	NM_002112.1	1200	tgctctctctctgagctctgaatc	233836	-	-	-	-	see also 1361 line
17129	DDC	NM_000790.1	1250	aggatctctctctggaactctgt	233858	-	-	-	-	aromatic-L-amino acid decarboxylase
17130	AMD1	NM_001634.3	623	cgcttggttactctcaattcaaa	233870	-	-	-	-	adenosylmethionin e decarboxylase
17131	KIAA0251	NM_015027.1	1640	cgagtgagacactctgactgctg	233885	-	-	-	-	-
17132	SGP1	NM_003901.2	1667	cggaacagactgactatatacaat	233937	-	-	-	-	see also 2657 line
17133	ALDOA	NM_000034.2	1975	ctctcgcagagagctgactctcaag	233944	-	-	-	-	USF43/USF44 complex
						-	-	-	-	anemia hemolytic(溶血性貧血)

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17134	ALDOB	NM_000035.2	668	tgactgtactatgtatgaac	233950	-	fructose- bisphosphate aldolase	fructosemia(果糖血症)
17135	ALDOC	NM_005165.1	640	gagcagacgacgaactgtgt	233958	-	fructose- bisphosphate aldolase	
17136	CGI-26	NM_015954.1	917	agcagacgactcttctgaatgag	233986	-		
17137	HMGCL	NM_000191.1	481	cagcgcgcgagccactattctt	234037	-	see also 6568 line see also 159 line	
17138	GUCY1A2	NM_000855.1	2273	ggttcgcatgacacggtattgc	234073	-	receptor guanylate cyclase	
17139	GUCY1A3	NM_000856.1	714	cgctgcagacgcgtactatcttc	234082	-	receptor activity, signal transduction cyclase	
17140	GUCY1B2	NM_004179.1	1087	agctgcgactacacgaacttc	234141	-	see also 2786 line	
17141	GUCY1B3	NM_000857.1	1211	agcttcagactacgctgaagac	234196	-	see also 560 line	
17142	SAG	NM_018417.2	681	ctctgcgcctctcatgcatatt	234230	-		
17143	CGI-150	NM_016080.2	506	tgtcactactgtgttaactctct	234347	-		
17144	GLO1	NM_006708.1	455	gaggtatgtgtcatattgaatt	234369	-	lactoylglutathione lyase	
17145	HCCS	NM_005333.1	826	taggcacgattgcatataaac	234383	-	holocytochrome c synthase	
17146	CTH	NM_001902.4	808	atggccctgtgtctcttaattg	234417	-		cystathioninuria(システオニン尿症)
17147	SDS	NM_006843.2	937	cgccctgcgcgctgtctctatgc	234442	-	l-serine ammonia- lyase	
17148	ASL	NM_000048.2	1107	tgaccacgtgtctctctctacg	234452	-	argininosuccinate lyase	argininosuccinaciduria(アルギニノコハク酸尿症)
17149	ADSL	NM_000026.1	1087	tgctctgtatcccaaaatattt	234473	-	see also 2 line	
17150	C20orf3	NM_020531.1	329	cgaggtgtctatgcacaaattatg	234486	-		
17151	FLJ10916	NM_018271.2	381	ctatgcctgctgacgaactatgc	234488	-		
17152	LSS	NM_002340.2	316	ctatgcctgctgacgaactatgc	234508	-	lyase	
17153	SDS-RS1	NM_138432.2	831	cgctgcgcacccctcaattgc	234536	-		
17154	SRR	NM_021947.1	430	agagagcgtcatgtttatctgt	234548	-		
17155	FOXO18	NM_028607.3	2728	atgcgcctctcttcaactctgc	234600	-	see also 8210 line	
17156	LOC15067	NM_138336.1	452	agtcgcgcgtcgtcaattgttacc	234626	-	see also 9288 line	
17157	PEO1	NM_021830.3	1843	cgactcactatgtctctgaag	234663	-	see also 8181 line	
17158	FKBP11	NM_016954.1	391	gagagcagagaggaactcctcc	234673	-		
17159	KIA00073	NM_015342.1	1742	tgtctaacgcggagataactact	234722	-	see also 6383 line	
17160	PN4	NM_006223.2	78	gactcgttctcagctttcaacaca	234733	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	
17161	PP1B	NM_000942.3	410	cagcaaatctcatcgtgttaata	234739	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	

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17162	PP1F	NM_005729.2	324	gaagaagccttcggcacaagaag	234740	-	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	-
17163	PP1L1	NM_016059.3	346	tgactctctgactactcaact	234745	-	-	cyclophilin-type peptidyl-prolyl cis- trans isomerase	-
17164	PP1L2	NM_014337.2	1127	agcagcagctgagcagctact	234773	-	-	-	-
17165	PP1L3	NM_032472.3	488	actctgagcagctgactctgag	234778	-	-	-	-
17166	SDOCAG1	NM_005869.1	602	agcttgagcagcagcagcagc	234800	-	-	-	-
17167	EBP	NM_006579.1	351	ggcctgctgtctctactcag	234818	-	receptor activity	transmembrane receptor	-
17168	DCI	NM_001919.1	273	aagcagctctcggctgctctct	234824	-	-	dodecenoyl-CoA delta-isomerase	-
17169	JPH2	NM_020433.3	1173	agcagcagcttccaagctatgag	234828	-	-	-	-
17170	RPIA	NM_144563.1	715	ggcctgcttgactcactgaaagg	234869	-	-	ribose-5- phosphate prostaglandin-D synthase	-
17171	PGDS	NM_014485.1	117	aagctgactctgcctgaatcaaa	234881	-	signal transduction	human cyclochrom P450	-
17172	PTGIS	NM_000961.2	986	gagagctctgagagatctcttgg	234899	-	-	phosphomannomut ase	-
17173	PMH1	NM_002676.1	244	cgaggcagcttcaagataagcagc	234912	-	-	phosphomannomut ase	-
17174	PMH2	NM_000303.1	180	agctcgatgactcttgaggaag	234919	-	-	-	-
17175	PGM3	NM_015599.1	1036	agtttcaacacagctctctgaag	234975	-	see also 6,09 line	-	-
17176	FLJ32029	NM_173562.2	1033	tgagctcgagcagcagctatgac	235012	-	-	-	-
17177	PGM2	NM_018290.1	635	tgagcagctcttttaattgagc	235049	-	-	-	-
17178	PGM5	NM_021965.2	1542	tgagtcaccaagcagcagctat	235091	-	-	structural molecule	-
17179	MUT	NM_000255.1	921	cagctgagcttgagctctctctg	235126	-	see also 199 line	-	-
17180	GALE	NM_000403.2	165	tgagctcgagcagcctctctaat	235169	-	-	UDP-glucose 4- epimerase	galactosemia(ガラクトース血症)
17181	MGFE	NM_032601.2	388	tgagctgagctatgattgagc	235169	-	-	-	-
17182	SYNA1	NM_016366.3	1231	tcgctctgagctatgactctg	235196	-	-	-	-
17183	REBP	NM_032665.1	249	tgatgagcagctgcaaatctcc	235201	-	-	isomerase	-
17184	REBP	NM_029104.4	549	agtttcaacacagcctctctgaat	235206	-	-	isomerase	-
17185	TOPORS	NM_005802.2	649	atgtctcagcagcctctctgaat	235224	-	see also 40,46 line	-	-
17186	TXNDOS	NM_022065.2	1791	agctcaccacagctattgctttt	235327	-	-	-	-
17187	101F6	NM_007022.3	349	tgagcagcagctctgctgcttt	235330	-	-	-	-
17188	BRE	NM_004899.3	955	aagcttgagctctgctgctgaagg	235339	-	see also 3403 line	-	-
17189	HSPC155	NM_016406.1	487	gatttgagcagctctctctcata	235370	-	-	-	-
17190	NEDD8	NM_006156.1	130	aagagagatgagctgagctatga	235385	-	-	ubiquitin conjugating	-
17191	UBE1C	NM_003966.3	1266	cagctgagcagctctctctgaaga	235433	-	see also 2703 line	-	-
17192	UBE4A	NM_004786.2	2382	cgctcgctcagctctctctctctcc	235515	-	see also 3309 line	-	-

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17193	SAEI	NM_005500.1	296	ctgagctctgtgacgaagaag	235544	-	-	-	-
17194	AGP/L	NM_006395.1	1846	caatgacgtatgataaagc	235609	-	-	-	-
17195	UBA2	NM_005493.1	354	ctcccaaacacatttaaga	235631	-	-	see also 3639 line	-
17196	ABHD2	NM_007011.4	755	acatctatgcatttttga	235698	-	-	-	-
17197	ABHD3	NM_136340.3	1007	gaatttgcagcttctaac	235748	-	-	see also 9602 line	-
17198	ACBP3	NM_016630.2	850	gaatttgcagcttctaac	235777	-	-	-	-
17199	APBPPT	NM_039095.2	1349	atttcagcctctgaagct	235816	-	-	see also 2661 line	-
17200	BA75	NM_021160.1	1198	atttcagcctctgaagct	235835	-	-	see also 8113 line	-
17201	SGI	NM_015162.3	641	ctgcagctatgccttgaagc	235845	-	-	-	-
17202	SGR	NM_030924.2	548	actctccagcagcttgaagc	235871	-	-	-	-
17203	BUGS1	NM_030924.2	1173	caatgacgaagcgaagct	235930	-	-	-	-
17204	C12orf5	NM_020375.1	90	ctgcagcctctgaagaaga	235935	-	-	-	-
17205	C20orf135	NM_080921.1	29	tgctgcagctctgaagaaga	235952	-	-	-	-
17206	C20orf22	NM_019600.2	442	aaatgctctcttctgaagc	235961	-	-	see also 6501 line	-
17207	C21orf106	NM_015151.1	2153	ctctgatgacgctctgaagc	236006	-	-	-	-
17208	C5orf4	NM_015348.1	1287	tgctgcagcagcctctgaagc	236028	-	-	-	-
17209	G3H-111	NM_018048.1	428	tgctgctgagcagcagctgagc	236046	-	-	-	-
17210	G3H-67	NM_018014.1	635	aggactgagctcagcagctgaat	236070	-	-	see also 6615 line	-
17211	CTMP	NM_053005.2	262	tggaacgttgctctcaaaa	236084	-	-	-	-
DKFZP566									
17212	J2046	NM_031208.1	586	aaggagcttgagcagcttaaga	236098	-	-	-	-
17213	ECHDC1	NM_018479.1	491	actcttattgactctcaactc	236109	-	-	-	-
17214	ECHDC3	NM_024693.2	547	gaattacattgcgaagattt	236134	-	-	-	-
17215	FA2H	NM_024306.2	988	ggactctctctatgactga	236143	-	-	-	-
17216	FHL5	NM_020482.3	796	gaatttgcagcgaactgaag	236158	-	-	hydrolyse	-
17217	FL110948	NM_018281.1	807	gaatttgcagcgaactgaag	236176	-	-	-	-
17218	FL112377	NM_024989.1	1136	ctgacttgcagcgaactgaag	236229	-	-	-	-
17219	FL114906	NM_030859.1	422	ctgacttgcagcgaactgaag	236266	-	-	-	-
17220	FL120581	NM_017088.2	556	ctgacttgcagcgaactgaag	236281	-	-	-	-
17221	FL120980	NM_035149.2	422	ggagcagcagcgaactgaag	236288	-	-	-	-
17222	FL121820	NM_021925.1	361	tgctgcttgcagcgaactgaag	236322	-	-	-	-
17223	FL121963	NM_023560.2	820	tgctgcttgcagcgaactgaag	236355	-	-	see also 8643 line	-
17224	FL284449	NM_144714.1	447	tgctgcttgcagcgaactgaag	236405	-	-	-	-
17225	FL323332	NM_144641.1	639	tgctgcttgcagcgaactgaag	236426	-	-	phosphatase	-
17226	FL337964	NM_182578.1	687	gaatttgcagcgaactgaag	236431	-	-	-	-
17227	FL340125	NM_178494.2	558	gaatttgcagcgaactgaag	236436	-	-	-	-
17228	FL340773	NM_152666.1	1628	ctgagcagcagcgaactgaag	236484	-	-	-	-
17229	GAF1	NM_015470.1	2012	tgacacatgcagcgaactgaag	236494	-	-	-	-
17230	GENX-	NM_003943.1	1116	gaatttgcagcgaactgaag	236512	-	-	-	-
17231	GPHN	NM_020806.3	154	tttttgagcgaactgaagc	236522	-	-	see also 7978 line	-
GPCR									
17232	GPCR6	NM_005682.3	1255	ctgagcagcagcgaactgaagc	236577	-	-	receptor activity, signal transduction	-
melanoma(メラノーマ)									

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17233	TA	NM_017512.1	854	gtccacaaatagatgattta	236592	-	-	-	-
17234	KIAA1463	NM_020849.1	736	caacagctatgagatcattctaa	236610	-	see also 7993 line	-	-
17235	KIAA1959	NM_032873.2	1601	ttagtcttcagagatcagagga	236675	-	see also 9329 line	-	-
17236	UPH	NM_139248.1	190	ttagtcttcagagatcagagga	236692	-	-	-	-
17237	LOC12861	NM_137906.1	1339	ttctcttcagagatcagagga	236730	-	-	-	-
17238	LOC19732	NM_134971.1	1784	ttagtcttcagagatcagagga	236743	-	-	-	-
17239	LOC3081	NM_136793.2	762	agagatcctcagagatcagagga	236763	-	-	-	-
17240	LYPAL1	NM_136794.1	193	caactcttcagagatcagagga	236769	-	-	-	-
17241	MCOL1	NM_020531.1	868	atagatcctcagagatcagagga	236804	-	channel	-	muco1p1dost (ムコリドノース)
17242	MGI15479	NM_037750.1	723	agagatcctcagagatcagagga	236815	-	-	-	-
17243	MGC19531	NM_005167.4	2222	ttgcttcagagatcagagga	236829	-	see also 3635 line	-	-
17244	MGC3352	NM_138575.1	431	ttgcttcagagatcagagga	236832	-	-	-	-
17245	MGC52	NM_004531.3	863	cttgcagcttcagagatcagagga	236849	-	see also 3087 line	-	-
17246	MORC1	NM_006096.2	243	caagcatcagagatcagagga	236859	-	enzyme	-	breast cancer (乳癌)
17247	NDRG1	NM_024777.2	163	ttagtcttcagagatcagagga	236867	-	see also 8401 line	-	-
17248	OAZIN	NM_015878.3	1428	aggatcagagatcagagga	236970	-	see also 6548 line	-	-
17249	PGS1	NM_024119.2	1425	agctgatttcagagatcagagga	236999	-	-	-	-
17250	PICB	NM_004855.3	1442	ttttcttcagagatcagagga	237037	-	-	-	-
17251	PLEKH-E1	NM_194449.1	1613	ctaacagcttcagagatcagagga	237101	-	see also 10309 line	-	-
17252	PME-1	NM_016147.1	379	gttttcagagatcagagga	237135	-	see also 6665 line	-	-
17253	PNPLA1	NM_136761.1	599	ttagtcttcagagatcagagga	237184	-	-	-	-
17254	PNPL1	NM_139245.1	713	aaagcatcagagatcagagga	237189	-	see also 9582 line	-	-
17255	SAH	NM_005622.1	678	baagcatcagagatcagagga	237214	-	see also 3901 line	-	-
17256	SERAC1	NM_032861.2	2011	caagcatcagagatcagagga	237281	-	-	-	-
17257	SLC27A3	NM_024330.1	1332	ggagcatcagagatcagagga	237289	-	-	-	-
17258	SLC27A4	NM_005894.2	2096	agcttcagagatcagagga	237324	-	-	-	-
17259	TA-PP2C	NM_132833.1	920	agcttcagagatcagagga	237330	-	see also 9687 line	-	-
17260	TA-WDRP	NM_132831.1	1748	gttttcagagatcagagga	237398	-	see also 9686 line	-	-
17261	TIS-2.2	NM_020376.2	567	caagcatcagagatcagagga	237435	-	-	-	-
17262	UBASH3A	NM_018966.1.1	1348	agagatcctcagagatcagagga	237452	-	enzyme	-	-
17263	UPP2	NM_173555.2	1036	ttagtcttcagagatcagagga	237492	-	see also 10065 line	-	-
17264	UXS1	NM_025076.1	905	ttagtcttcagagatcagagga	237498	-	receptor_activity	-	-
17265	HTR1B	NM_000863.1	55	ttagtcttcagagatcagagga	237510	-	receptor_activity	-	serotonin receptor (serotonin receptor)
17266	HTR1D	NM_000864.3	1366	cttagcatcagagatcagagga	237531	-	receptor_activity	-	-
17267	HTR1E	NM_000865.1	733	cttagcatcagagatcagagga	237535	-	receptor_activity	-	-
17268	HTR1F	NM_000866.1	995	ttagtcttcagagatcagagga	237587	-	see also 561 line	-	-
17269	HTR2A	NM_000868.1	823	ttcttcagagatcagagga	237615	-	receptor_activity	-	schizophrenia (精神分裂症), alcoholism (アルコール依存症), Alzheimer disease (アルツハイマー病)
17270	HTR2C	NM_000868.1	1348	ttcttcagagatcagagga	237655	-	signal transduction	-	serotonin receptor (serotonin receptor)

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17271	HTR4	NM_000870.2	575	ctgagctatccacagctttttt	237692	-	see also 565 line	receptor_activity,		
17272	HTR5A	NM_024012.1	333	gagagcttgcagctttgagctg	237710	-	gpr,	signal transduction	serotonin receptor	-
17273	HTR7	NM_000872.3	953	tgcctacagctttctctctcc	237719	-	receptor_activity,	gpr,		-
17274	ADRA2A	NM_000881.2	2088	gtccacagcagctcttcaaatt	237728	-	gpr,	receptor_activity,	potassium channel	
17275	ADRA2B	NM_000882.3	1039	agagccttgcctctatagctg	237734	-	gpr,	kinase_related,	regulator	-
17276	ADRA1A	NM_000680.1	489	cgcacccgtgcacattccaag	237736	-	gpr,	receptor_activity,	alpha2-adrenergic	
17277	ADRA1B	NM_000679.2	1059	agcatttctgcctgattctca	237756	-	gpr,	signal transduction	receptor	-
17278	ADRA1D	NM_000678.2	1266	ctttccacgcagcagctcaag	237762	-	see also 426 line	receptor_activity,	alpha1-adrenergic	
17279	ADRB2	NM_000024.3	1426	ggagagcattgctacaaatga	237779	-	gpr,	signal transduction	receptor	-
17280	HRH1	NM_000861.2	1384	tgccttcacagcagctatgctc	237789	-	receptor_activity,	translation	regulator	obesity(肥満)
17281	HRH2	NM_022304.1	672	cgcacactgcaccccttcttc	237804	-	gpr,	kinase_related,	histamine receptor	-
17282	HRH3	NM_007232.1	859	ctgtctatcagatcttctctca	237815	-	gpr,	gpr,	histamine receptor	-
17283	HRH4	NM_021624.2	657	cagctctcttgctcgtctcttc	237840	-	gpr,	receptor_activity,	histamine receptor	-
17284	HTR6	NM_000871.1	638	gcgcacacgttccactcttcc	237851	-	gpr,	signal transduction	histamine receptor	-
17285	DRD1	NM_000794.2	1783	tatagacgtctctatcaaac	237878	-	gpr,	receptor_activity,	transcription	
17286	DRD2	NM_000795.2	1295	ttctcttcagcttttcttctc	237896	-	gpr,	signal transduction	factor AP-2 alpha	schizophrenia(精神分裂症)
17287	DRD3	NM_000796.2	826	gcttcacagcactcttcttc	237900	-	see also 480 line	see also 491 line		
17288	DRD5	NM_000798.3	87	ggagcagcttgcctctatccagc	237914	-	see also 491 line	receptor_activity,	dopamine receptor	blepharospasm(眼瞼痙攣), schizophrenia(精神分裂症)

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17289	OR1A1	NM_014565.1	310	atataagccttgatcaacacaga	237921	receptor_activity, signal_transduction	olfactory receptor	-
17290	OR1A2	NM_012352.1	835	gtacccacagcttaaatctctt	237944	receptor_activity, signal_transduction	olfactory receptor	-
17291	OR1D2	NM_002548.1	755	atgagacactttgatgtatatac	237955	receptor_activity, signal_transduction	olfactory receptor	-
17292	OR1D5	NM_014586.1	564	atctccacacccctcatcttc	237955	receptor_activity, signal_transduction	olfactory receptor	-
17293	OR1G1	NM_003555.1	286	gggtctctactacagttgtattt	237969	receptor_activity, signal_transduction	olfactory receptor	-
17294	OR2C1	NM_012368.1	697	ggagagcgaaagcgttcaatcc	237983	receptor_activity, signal_transduction	olfactory receptor	-
17295	OR3A1	NM_002550.1	231	caactcactcttccatcaatgt	237986	receptor_activity, signal_transduction	olfactory receptor	-
17296	OR51B4	NM_033179.1	555	ctgtctcatatcacctttaatc	238003	receptor_activity, signal_transduction	olfactory receptor	-
17297	OR51E2	NM_030774.2	858	tggcgtggagcgaagtgctatc	238021	receptor_activity, signal_transduction	olfactory receptor	-
17298	OR7A5	NM_017508.1	426	ttctgcacattgtgttacttcc	238028	receptor_activity, signal_transduction	olfactory receptor	-
17299	OR7C1	NM_198944.1	53	cagcaacgtcagagatcatcttc	238033	receptor_activity, signal_transduction	olfactory receptor	-
17300	OR8B8	NM_012378.1	504	cttgtccataaaccttgcaccc	238048	receptor_activity, signal_transduction	olfactory receptor	-
17301	TAS2R1	NM_019599.1	391	ctgggtctctctatataktatc	238063	receptor_activity, signal_transduction	olfactory receptor	-
17302	TAS2R10	NM_023921.1	379	atgtctctctcccttctgagatg	238093	receptor_activity, signal_transduction	olfactory receptor	-
17303	TAS2R13	NM_023920.1	128	caatcgataaacctctctatctc	238118	receptor_activity, signal_transduction	olfactory receptor	-
17304	TAS2R14	NM_023922.1	404	tgtgactctggtctctctgttt	238147	receptor_activity, signal_transduction	olfactory receptor	-

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17305	TAS2R16	NM_016945.1	288	cagctctactacagctctact	238164	receptor_activity, gpr, signal transduction	-	-
17306	TAS2R3	NM_016943.1	374	gagtttcacagctgagctg	238191	receptor_activity, gpr, signal transduction	-	-
17307	TAS2R4	NM_016944.1	478	gtactacagagaaacacac	238211	receptor_activity, gpr, signal transduction	-	-
17308	TAS2R5	NM_016980.1	228	ttgtctctctactcttagtct	238229	receptor_activity, gpr, signal transduction	-	-
17309	TAS2R7	NM_023919.1	175	ttgtgcgtaactacttagatg	238253	receptor_activity, gpr, signal transduction	-	-
17310	TAS2R8	NM_023918.1	188	tttttztatcagctcaatggtg	238274	receptor_activity, gpr, signal transduction	-	-
17311	TAS2R9	NM_023917.1	227	atggcaatactcgtctartaaac	238305	receptor_activity, gpr, signal transduction	-	-
17312	ELOVL4	NM_022726.2	248	cgggtatctctctaaacgact	238320	receptor_activity, gpr, signal transduction	G-protein coupled photoreceptor	-
17313	OPN1SW	NM_001708.1	306	tgtctctcagctgcacattgtt	238367	receptor_activity, gpr, signal transduction	opsin	color blindness tritanopic(第3色盲)
17314	OPN3	NM_014322.1	945	ttcttaactcgaacactgtatac	238391	receptor_activity, gpr, signal transduction	G-protein coupled photoreceptor	-
17315	OPN4	NM_039282.1	401	gggcaactcagctgctctata	238396	receptor_activity, gpr, signal transduction	G-protein coupled photoreceptor	-
17316	RDS	NM_000322.2	532	aagcgcagctctctctctgtt	238407	receptor_activity, gpr, signal transduction	G-protein coupled photoreceptor	retinal degeneration(網膜変性), retinitis pigmentosa(色素性網膜炎)
17317	RHO	NM_000539.2	898	agccagcagctgacattctacac	238427	receptor_activity, gpr, signal transduction	see also 408 line	-
17318	ROM1	NM_000327.2	389	aagctctgaatcagctctataac	238430	receptor_activity, gpr, signal transduction	G-protein coupled photoreceptor	retinal degeneration(網膜変性)
17319	PTGER1	NM_000955.2	1006	gggcaactctgctgctatcatg	238443	receptor_activity, signal transduction	prostaglandin E receptor	-
17320	PTGER2	NM_000956.2	156	tggcaactcctccactactccac	238444	receptor_activity, gpr, signal transduction	thromboxane receptor	-

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17321	PTGER3	NM_000957.2	720	ctgtatcagaccacatgaaga	238454	receptor activity, transcription, regulated	prostaglandin E receptor	-
17322	PTGER4	NM_000958.2	1885	gaggaacttcgcaatcagaga	238487	receptor activity, signal transduction	prostaglandin E receptor	-
17323	PTGFR	NM_000959.2	651	atgcacattgacggatgatgg	238503	receptor activity, signal transduction	thromboxane receptor	-
17324	PTGDR	NM_000953.2	930	gtttctctcccgtaatttc	238532	receptor activity, signal transduction	thromboxane receptor	-
17325	TBXA2R	NM_001080.2	446	tggcgtctcatgatctcttc	238539	receptor activity, signal transduction	Smad3/Sp-1 heterodimer	bleeding disorder (出血性疾患)
17326	EDG1	NM_001400.2	293	ctgactacgtcaacatgatc	238541	receptor activity, signal transduction	lysophingolipid	-
17327	EDG2	NM_001401.2	861	ctggactatgccacgttatgg	238565	receptor activity, signal transduction	lysophosphatide	-
17328	EDGA	NM_004720.3	441	cgcgtgctcatgctcatggg	238576	receptor activity, signal transduction	-	-
17329	TSHR	NM_000369.1	1326	agacataatgggtcacagttc	238619	receptor activity	thyroid-stimulating hormone receptor	TSH resistance (甲状腺刺激ホルモン不応症)
17330	GNRHR	NM_000406.1	2257	tgcaggaccacagttatcac	238654	receptor activity, signal transduction	gonadotropin-releasing hormone receptor	Hypogonadotropic hypogonadism (低ゴナドトロピン性性機能低下症)
17331	FSHR	NM_000145.2	1219	tatgtctgctgatcctaactacc	238708	receptor activity, signal transduction	ovarian dysgenesis (卵巢發育不全), premature ovarian failure (早発閉経), ovarian hyperstimulation syndrome (卵巢過剰刺激症候群)	-
17332	GPR24	NM_005297.2	519	ggggagcatctctcatcaaca	238723	receptor activity, signal transduction	neuropeptide receptor	-
17333	GPR105	NM_014879.1	901	aagaatctacgcgaacatatt	238741	receptor activity, signal transduction	UDP-activated nucleotide receptor	-
17334	P2RY4	NM_002565.2	820	ctgtcacctctttttctatgag	238764	receptor activity	uridine nucleotide receptor	-
17335	GPR86	NM_023914.2	221	cagagcaactggatgacagc	238770	receptor activity	-	-
17336	GPR87	NM_023915.2	1366	agatcggaggttcgcatatt	238831	receptor activity, signal transduction	-	-

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17337	P2RY12	NM_022788.3	587	cttgcgaactgaactcagatg	238842	gpcr, receptor activity, signal transduction	-
17338	GPR135	NM_022571.3	1275	aagccgcgaactgcctcgaagcc	238869	gpcr, receptor activity, signal transduction	-
17339	PTAFR	NM_008952.2	416	catcgaactgcgcctcaagaact	238880	gpcr, receptor activity, signal transduction	-
17340	CYS1TR1	NM_008639.2	1240	tcttcacgaactgcctctatgacc	238929	gpcr, receptor activity, signal transduction	-
17341	CYS1TR2	NM_020371.2	283	agctgcgaactgcctcagatgag	238940	gpcr, receptor activity, signal transduction	-
17342	CNR1	NM_016068.3	831	ctctgcgaactgcgaactcgttt	238968	gpcr, receptor activity, signal transduction	-
17343	CNR2	NM_001841.1	1171	tgcgcgaactgcgaactcgtaga	238981	gpcr, receptor activity, signal transduction	-
17344	MTNRI1A	NM_005958.2	1055	acttgcgcgaactgcgttaactg	238988	gpcr, receptor activity, signal transduction	-
17345	MTNRI1B	NM_005959.2	847	gactgcgcgaactgcgtatcttc	239007	gpcr, receptor activity, signal transduction	-
17346	TRHR	NM_003301.1	523	tatgcactcaagaactgcttttg	239030	gpcr, receptor activity, signal transduction	-
17347	ADMR	NM_007264.2	975	tgttgcacactgcctcactcttc	239054	gpcr, receptor activity, signal transduction	-
17348	ADORA1	NM_000674.1	1067	cctgcgaactgcgaactcactg	239057	gpcr, receptor activity, signal transduction	-
17349	ADORA2A	NM_000675.3	1102	tcttctctccaccacaaactg	239085	gpcr, receptor activity, signal transduction	-
17350	ADORA2B	NM_000676.2	1164	ctctgcgaactgcgaactcactg	239078	gpcr, receptor activity, signal transduction	-
17351	ADORA3	NM_000677.2	1346	atgcgcgaactgcgaactcactg	239091	gpcr, receptor activity, signal transduction	-
17352	AGTRL1	NM_005161.2	490	ggagcgcctgcgaactcacttca	239102	gpcr, receptor activity, signal transduction	-
17353	BLR1	NM_001716.2	150	cagatgcgaactcactaactgaca	239111	gpcr, receptor activity, signal transduction	-
17354	OMKOR1	NM_020311.1	381	atgcgaactgcgaactcacttgc	239117	gpcr, receptor activity, signal transduction	-

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17355	CXCR6	NM_006564.1	950	tttcaactcctgaattttcgaag	239142	-	receptor_activity, gpcr, signal_transduction	-	-
17356	EBI2	NM_004051.2	1005	aagcaaatgaatgatgattt	239200	-	gpcr, receptor_activity, signal_transduction	purinergic nucleoside receptor, G- protein coupled	-
17357	ETVBR- LP-2	NM_004767.2	362	aggcaatgaggcaactcaga	239204	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17368	FKSG79	NM_032653.1	743	caaggatctcctaatttcctt	239239	-	gpcr, receptor_activity, signal_transduction	purinergic nucleoside receptor, G- protein coupled	-
17369	FY	NM_002036.1	1075	gttgactctgcacccctgataac	239280	-	gpcr, receptor_activity, signal_transduction	-	-
17380	GHSR	NM_004122.1	345	ctgcacaactctccaattgtca	239285	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17381	GHRHR2	NM_057163.1	72	tttgagttgcactggaattatca	239272	-	gpcr, receptor_activity, signal_transduction	-	-
17382	QPR	NM_007223.1	1886	cggatcagatgcgcgaattgag	239308	-	gpcr, signal_transduction	-	-
17383	GPR1	NM_005279.2	676	ctgtgagttcaataatcatcct	239328	-	gpcr, receptor_activity, signal_transduction	rhodopsin-like receptor	-
17384	GPR100	NM_181885.1	83	atgtctgcagtcctgcacaatc	239341	-	gpcr, receptor_activity, signal_transduction	-	-
17385	GPR101	NM_054021.1	99	ccctcacaacggctgcttattct	239349	-	gpcr, receptor_activity, signal_transduction	-	-
17386	GPR102	NM_053278.1	808	tggttaccgtatcagttgatct	239385	-	gpcr, receptor_activity, signal_transduction	-	-
17387	GPR119	NM_178471.1	646	cggactccagcaactcaaaagc	239396	-	gpcr, receptor_activity, signal_transduction	-	-
17388	GPR12	NM_005288.1	713	tgccactgcacatataaac	239408	-	gpcr, receptor_activity, signal_transduction	-	-
17389	GPR120	NM_181745.1	557	ccgacacagaatttcgatttgc	239410	-	gpcr, receptor_activity, signal_transduction	-	-
						-	see also 3704 line		
						-	see also 10252 line		

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17370	GPR132	NM_013345.2	1481	caggattaccgggtactactacg	239419	gpor, receptor activity, signal transduction	-	atherosclerosis(粥状硬化症)
17371	GPR145	NM_032503.1	683	ctacagatctctctgtataaca	239437	gpor, receptor activity, signal transduction	-	-
17372	GPR146	NM_138445.1	755	ctgaagcccaactctctggtacc	239458	gpor, receptor activity, signal transduction	-	-
17373	GPR15	NM_005290.1	805	tctcgccagagacactatttacc	239482	gpor, receptor activity, signal transduction	purinergic nucleotide receptor, G-	-
17374	GPR151	NM_194251.1	398	aactgagatcccaactacacacc	239495	see also 10305 line	protein coupled	-
17375	GPR160	NM_014373.1	941	tgtatcaggtctatcaggtataact	239524	gpor, receptor activity, signal transduction	-	-
17376	GPR161	NM_007369.1	1086	ccggtattatcaggagaccatttg	239551	gpor, receptor activity, signal transduction	-	-
17377	GPR18	NM_005292.2	1357	ctgtatgtctacggtcactaagc	239596	gpor, receptor activity, signal transduction	purinergic nucleotide receptor, G-	-
17378	GPR19	NM_006143.1	1227	tgtcttggccacttaactcaaat	239631	gpor, receptor activity, signal transduction	protein coupled	-
17379	GPR22	NM_005295.1	88	atgtaccacactctctatctatcc	239642	gpor, receptor activity, signal transduction	rhodopsin-like receptor	-
17380	GPR23	NM_005296.1	891	gcctcccaaacctatactactant	239708	see also 3105 line see also 3170 line	-	-
17381	GPR26	NM_153442.1	912	ccgcctctcgccacctttgtgtac	239721	gpor, receptor activity, signal transduction	-	-
17382	GPR27	NM_018971.1	1103	gcactctgaagcattgtttta	239725	gpor, receptor activity, signal transduction	O-O chemokine receptor	-
17383	GPR3	NM_005281.2	494	ccgtactctctctctgtacactg	239727	gpor, receptor activity, signal transduction	rhodopsin-like receptor	-
17384	GPR30	NM_001505.1	1293	ccagcagcgcctctctgtttta	239735	gpor, receptor activity, signal transduction	purinergic nucleotide receptor, G-	-

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17385	GPR32	NM_001506.1	947	acgtctgtgttcacagatttc	239739	gpr, receptor activity, signal transduction	N-formyl peptide receptor
17386	GPR34	NM_005300.2	726	ttgtacttcaactatgatttt	239770	see also 3711 line	
17387	GPR35	NM_005301.2	1067	gagcacccgcacaafttcaact	239783	gpr, receptor activity, signal transduction	rhodopsin-like receptor
17388	GPR37	NM_005302.2	1267	ggacgaagatggacaaatttc	239805	see also 3712 line	
17389	GPR38	NM_001507.1	971	cgagaggttcgggagatgac	239850	gpr, receptor activity, signal transduction	rhodopsin-like receptor
17390	GPR39	NM_001508.1	51	caagtatgtcccgagttgagg	239854	gpr, receptor activity, signal transduction	rhodopsin-like receptor
17391	GPR43	NM_005306.1	428	tcttgatcatcgttcaacttgc	239870	gpr, receptor activity, signal transduction	rhodopsin-like receptor
17392	GPR44	NM_004778.1	428	ctgcactctctcaatctttct	239874	gpr, receptor activity, signal transduction	N-formyl peptide receptor
17393	GPR48	NM_018490.1	3259	ttggctgctactactcaaatct	239969	see also 2492 line	protein-hormone receptor
17394	GPR49	NM_003667.2	1242	ttagctcctcgttcgtgaatttgc	239987	gpr, receptor activity, signal transduction	
17395	GPR50	NM_004224.1	1005	ggggcacctatcatatcttcc	240053	gpr, receptor activity, signal transduction	melatonin receptor
17396	GPR52	NM_005684.1	826	atctcttagctctccatataat	240086	gpr, receptor activity, signal transduction	rhodopsin-like receptor
17397	GPR54	NM_032551.2	126	ctgactctgcctcctctctcttc	240090	gpr, receptor activity, signal transduction	
17398	GPR55	NM_005683.2	341	gaagacaggtggccgttatgc	240094	gpr, receptor activity, signal transduction	
17399	GPR58	NM_014826.1	489	atggggagacacctgtttatgc	240122	gpr, receptor activity, signal transduction	
17400	GPR61	NM_031936.2	731	atggagcctactactacgtagt	240150	gpr, receptor activity, signal transduction	rhodopsin-like receptor
17401	GPR62	NM_080865.2	1005	ctggcgtggggcaatttgcagc	240153	gpr, receptor activity, signal transduction	rhodopsin-like receptor
17402	GPR63	NM_030784.1	617	ttgcctctgtaactatctact	240174	see also 8947 line	

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17403	GPR73	NM_138964.1	111	cagctaacgcgactatgatg	240204	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17404	GPR73.1	NM_1441773.2	198	ctcgcgcagctgaactgtatct	240212	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17405	GPR75	NM_006794.1	1007	gtcgcagctccgcgtctgatagg	240231	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17406	GPR78	NM_080819.2	1175	ctgtttgcccctgatgcatga	240253	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17407	GPR80	NM_080818.2	665	ttctctaccacgcatatccaca	240280	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17408	GPR82	NM_080817.1	647	ttactactaacatctactct	240318	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17409	GPR83	NM_016540.2	616	atgtctatctgcagaatattatt	240346	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17410	GPR84	NM_020370.1	1212	ccgcgaattccgcagcatatg	240371	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17411	GPR85	NM_018970.3	1177	ttctctac-tcaagctgatattt	240388	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17412	GPR88	NM_022048.1	1109	gcggctcagctgctcaactcc	240405	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17413	GPR91	NM_033050.1	390	cagctatgactgactactgtatga	240414	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17414	ORCA	NM_014444.1	614	gcagccgcagtttgcagattccg	240429	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17415	GREAT	NM_130866.2	355	tatgttgctgcgcacactatttg	240442	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17416	H963	NM_013308.2	1054	gtctcgaactgtctgtttgctcc	240525	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17417	JCG1	NM_153445.1	833	gtttgtcatgcatctactctaca	240540	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17418	JCG3	NM_153444.1	629	tatgcgtctctactactatcttc	240556	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,
17419	LGR6	NM_021636.1	2171	ccagtgctcatcactactctatc	240580	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,	receptor_activity, gpcr,

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17420	LRG7	NM_021634.1	764	aagcgaacatcatcataatatta	240607	-	gpcr, receptor activity, signal transduction	-	-	genadotropin unresponsiveness(性腺刺激ホルモンの無応答症), Leydig cell hypoplasia(ライディヒ細胞形成不全), micropenis(小陰茎症), Hypogonadotropic hypogonadism(低ゴナドトロピ
17421	LHGR	NM_000233.1	1166	aagctctgaacactcaagcgc	240682	-	receptor activity, gpcr	ldropin-choriogonadotropic hormone receptor	-	
17422	MAS1L	NM_052967.1	844	ctgcccacccctctatcacagcttt	240704	-	gpcr,	rhodopsin-like receptor	-	
17423	WBC2	NM_015292.1	1031	caagggaactatctgaattcaccc	240757	-	receptor activity, signal transduction	-	-	
17424	MGC21621	NM_145019.2	567	gggacagctttccgactacatcc	240794	-	gpcr,	-	-	
17425	MGC26856	NM_152719.1	176	acgaattggcatggcgaagtcacac	240811	-	receptor activity, signal transduction	-	-	
17426	MGC40047	NM_175911.2	910	tctggctctatgaatatctgttt	240838	-	gpcr,	-	-	
17427	MRGX1	NM_147199.1	503	ctgaatctgctgtgtctcaaacca	240851	-	receptor activity, signal transduction	-	-	
17428	OPRL1	NM_000913.3	452	gggggaactccctctcatctatgcg	240862	-	gpcr,	-	-	
17429	OR10H1	NM_013940.1	907	aagaaagactctctctgaataact	240866	-	signal transduction	olfactory receptor	-	
17430	OR10H3	NM_013938.1	10	cagaactcaagaccatctctga	240869	-	-	olfactory receptor	-	
17431	OR10J1	NM_012351.1	117	tgcgctgtctctctcaatctataca	240873	-	receptor activity, signal transduction	olfactory receptor	-	
17432	OR11A1	NM_013937.2	737	ctgcactctcttgcgcgaattgt	240895	-	receptor activity, signal transduction	olfactory receptor	-	
17433	OR12D3	NM_030959.2	537	atgtcaagcgcgtctctagaattg	240911	-	receptor activity, signal transduction	olfactory receptor	-	
17434	OR1F1	NM_012360.1	817	atgtcactctgtgtgtatatacatt	240924	-	receptor activity, signal transduction	olfactory receptor	-	
17435	OR2H3	NM_007160.2	900	ggatgtctctgggaagaagaattg	240928	-	receptor activity, signal transduction	olfactory receptor	-	
17436	OR2J2	NM_030905.1	839	ctgtgtctcaacgcgaattcttaatt	240946	-	receptor activity, signal transduction	olfactory receptor	-	

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17437	OR2W1	NM_030903.1	89	ttctcccaattctcacttaatt	240950	receptor activity, signal transduction	gpor	olfactory receptor	-
17438	OR2A2	NM_002551.2	1068	atggcaggacacactttgtctct	240970	receptor activity, signal transduction	gpor	olfactory receptor	-
17439	OR2A1	NM_012375.1	218	ttctcacttgtagcagcattatg	240981	receptor activity, signal transduction	gpor	olfactory receptor	-
17440	OR5I1	NM_006637.1	426	ctctatgcgttgattctctgt	241022	receptor activity, signal transduction	gpor	olfactory receptor	-
17441	OR5V1	NM_030876.3	861	atgtacggcccatctcaactac	241048	receptor activity, signal transduction	gpor	olfactory receptor	-
17442	OR6A1	NM_003696.2	262	ctctcccaactacagctactattg	241052	receptor activity, signal transduction	gpor	olfactory receptor	-
17443	P2RY1	NM_002563.2	1538	ggcgttctacggattaaattgga	241063	see also 1650 line		olfactory receptor	-
17444	P2RY10	NM_014499.2	947	ttcgtttctcgggatgattaca	241110	gpor, receptor activity, signal transduction	gpor, nucleotide receptor, G- protein coupled	purinergic nucleotide receptor, G- protein coupled	-
17445	P2RY11	NM_002566.3	50	cagctcccgagacaaactcagt	241121	gpor, receptor activity, signal transduction	gpor, rhodopsin-like receptor	rhodopsin-like receptor	-
17446	P2RY2	NM_002564.2	526	tgaatgcgtccacacatat	241128	receptor activity, signal transduction	gpor	receptor activity, signal transduction	-
17447	P2RY5	NM_005767.3	1148	tggcaattgtcaccatttaag	241139	gpor, receptor activity, signal transduction	gpor, nucleotide receptor, G- protein coupled	purinergic nucleotide receptor, G- protein coupled	-
17448	P2RY6	NM_004154.3	350	ctgtgtctaccggagaaactca	241160	gpor, receptor activity, signal transduction	gpor, nucleotide receptor, G- protein coupled	purinergic nucleotide receptor, G- protein coupled	-
17449	P2RY8	NM_178129.3	373	cagatccctcgtcgtcattctca	241167	gpor, receptor activity, signal transduction	gpor, nucleotide receptor, G- protein coupled	purinergic nucleotide receptor, G- protein coupled	-
17450	IRH	NM_006583.1	562	ctgttctcctgttaccataac	241200	see also 4613 line			-
17451	SALPR	NM_016568.1	731	tggcgtcagcagcttccagttt	241227	gpor, receptor activity, signal transduction	gpor, nucleotide receptor, G- protein coupled	N-formyl peptide receptor	-
17452	adol	NM_033519.1	318	ctccaaacttctgaaactcag	241236	see also 4613 line		olfactory receptor	-

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17453	TA4	NM_175067.1	567	tttttcacgagctgttaatacaaa	241261	-	gpcr, receptor_activity, signal transduction	-
17454	TAR1	NM_138327.1	571	gggttaccgacctttttgacttgc	241279	-	gpcr, receptor_activity, signal transduction	-
17455	TAR3	NM_175057.1	412	ctaacctatcacacacagtttac	241297	-	gpcr, receptor_activity, signal transduction	-
17456	TG1019	NM_148922.3	94	ccgtgtgtggccagctgattatgc	241311	-	gpcr, receptor_activity, signal transduction	-
17457	VNI1R1	NM_020633.2	240	ggagccacagcactgtttctca	241328	-	gpcr, signal transduction	-
17458	VNI1R2	NM_173856.1	264	gggtgtggacacctacacattcc	241348	-	gpcr, signal transduction	-
17459	VNI1R3	NM_174980.1	108	ttttttcacagaggtattgttac	241374	-	gpcr, signal transduction	-
17460	VNI1R4	NM_173857.1	145	cttgtttgacacactttttatgc	241392	-	gpcr, signal transduction	-
17461	CASR	NM_000388.2	1505	aagaaatgttcacacagttttatgc	241435	-	see also 309 line	-
17462	GPRC5B	NM_018235.1	341	tttttcgtgctgacctttcaag	241474	-	-	-
17463	GPRC6A	NM_148963.1	1416	atctcacagagagatttaataact	241518	-	receptor_activity,	-
17464	GRM1	NM_000838.2	949	ggaggaatggagctttcaag	241566	-	gpcr	-
17465	GRM2	NM_000839.1	2189	gggtctctgctgaccttaattgpc	241622	-	see also 550 line	metabotropic glutamate, GABA-B-like receptor
17466	GRM3	NM_000840.1	1642	ggagctacacagctttcaattt	241647	-	gpcr, signal transduction	-
17467	GRM4	NM_000841.1	288	atgaatttcactgcagatgatgg	241684	-	see also 552 line	metabotropic glutamate, GABA-B-like receptor
17468	GRM5	NM_000842.1	1500	tggagatcatgactctattc-gatg	241709	-	gpcr, receptor_activity, signal transduction	-
17469	GRM6	NM_000843.2	1309	atattatcacacctcaattgaca	241740	-	gpcr, receptor_activity, signal transduction	-
17470	GRM7	NM_000844.2	2529	atgttaacagacattgtattatg	241801	-	gpcr, receptor_activity, signal transduction	-
17471	GRM8	NM_000845.1	1282	ttgtttacgacctgctccaatatg	241834	-	gpcr, signal transduction	-
						-	see also 359 line	-

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17472	RAI3	NM_003979.2	686	cgaggtatttctgcttgaata	241877	-	-	-	-
17473	TASIR1	NM_138657.2	2249	agagcttgcacgaactacaac	241924	-	receptor_activity,	-	-
17474	TASIR2	NM_152232.1	1939	ctgtatctcgcctcttttcc	241942	-	gpcr	-	-
17475	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17476	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17477	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17478	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17479	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17480	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17481	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17482	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17483	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17484	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17485	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17486	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17487	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17488	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17489	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17490	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)
17491	PTHRI	NM_000316.2	1564	ttctcgacatatacctgttc	241957	-	gpcr,	parathyroid hormone receptor	chondrosarcoma(軟骨肉瘤), Ollier disease(骨軟瘤), metaphyseal chondrodysplasia(骨軟瘤), 骨質形成症, chondrocytosis(軟骨瘤形成症)

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図4-6. (続き)

17492	CALCRL	NM_005795.2	1295	ctggtctcgtctgtatctatcc	242418	receptor_activity, gpcr	calcitonin receptor	-
17493	FZD1	NM_003505.1	1324	aactctatgactcactgactc	242450	gpcr, receptor_activity, signal transduction	fizzled receptor	-
17494	FZD10	NM_007197.2	2054	agctctcaagccgtgaagtaag	242480	gpcr, signal transduction	fizzled receptor	-
17495	FZD2	NM_001468.2	454	ccgcagctgcctcactctctga	242485	receptor_activity, signal transduction	fizzled receptor	-
17496	FZD3	NM_017412.2	2314	caactcagcagcactcaacagtc	242533	see also 6884 line		
17497	FZD4	NM_012193.2	907	atctcaagctgactcactgac	242542	see also 5185 line		
17498	FZD5	NM_003488.2	813	ccgaagctcctctcgtgactac	242561	gpcr, receptor_activity, signal transduction	fizzled receptor	-
17499	FZD6	NM_003506.2	547	gtgttccaactctgtgtaact	242568	see also 2383 line		
17500	FZD8	NM_031866.1	2040	acgtgcagctcctgtcttatcc	242631	gpcr, signal transduction	fizzled receptor	-
17501	FZD9	NM_003508.1	1714	tgtcagcactgccactataag	242644	gpcr, signal transduction	fizzled receptor	-
17502	GPR	NM_000164.1	279	ctgtcaaggtctcttgatgt	242646	gpcr, receptor_activity, signal transduction	gastric inhibitory peptide receptor	-
17503	GLP1R	NM_002089.2	567	gcagcaattctcgtcttctata	242682	gpcr, receptor_activity, signal transduction	peptide receptor, G-protein coupled	-
17504	GLP2R	NM_002416.1	285	tctcaagggactctttatcgtg	242672	see also 2850 line		
17505	GPR10	NM_153840.1	1365	ctctcagcactgcagcaaac	242739	see also 10021 line		
17506	GPR11	NM_153839.1	536	ctgagccataacagatattgt	242770	receptor_activity, gpcr, signal transduction		-
17507	GPR12	NM_153834.1	2482	aagcgaagtaacctcttgatata	242864	gpcr, receptor_activity, signal transduction		-
17508	GPR13	NM_153835.1	367	ctgtctctcgtctgtatctatct	243036	receptor_activity, gpcr, signal transduction		-
17509	GPR15	NM_153838.1	1460	tgtgtctcagcagatatactatcc	243090	receptor_activity, gpcr, signal transduction		-

図 46 (続き)

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17510	GPR116	NM_015234.1	72	ctggaatcagctactactatc	243112	gpcr, receptor_activity, signal transduction	-
17511	GPR123	NM_032422.1	951	aagccgctctcgtatctatca	243201	gpcr, receptor_activity, signal transduction	-
17512	GPR124	NM_032777.6	2690	ggattctcactcattatctgtg	243224	gpcr, receptor_activity, signal transduction	-
17513	GPR128	NM_032787.1	2313	tactatcactcgtctgttgaat	243302	gpcr, receptor_activity, signal transduction	-
17514	GPR133	NM_198827.1	564	cagcaatccactctactactg	243322	gpcr, receptor_activity, signal transduction	-
17515	GPR143	NM_000273.1	825	ttttgtgtctgcaatcatca	243335	gpcr, receptor_activity, signal transduction	molecular function unknown
17516	GPR157	NM_024980.2	568	ttgcattctgctctactcttctac	243343	gpcr, receptor_activity, signal transduction	albinism(白濁症)
17517	GPR97	NM_170776.3	1713	cagcccaactccgcatctcaaga	243454	gpcr, receptor_activity, signal transduction	-
17518	LANCL1	NM_006055.1	451	tatccgctgctcatctctccag	243468	gpcr, receptor_activity, signal transduction	-
17519	TAS2R38	NM_176817.1	797	ctgtccctcactcattctctgag	243503	gpcr, receptor_activity, signal transduction	-
17520	TAS2R39	NM_176881.1	915	cagccactcaactctactctctc	243522	gpcr, receptor_activity, signal transduction	-
17521	TAS2R40	NM_176882.1	164	ctgtgacccactcattgttgatg	243530	gpcr, receptor_activity, signal transduction	-
17522	TAS2R41	NM_176883.1	131	tgtatctactctcattactcttg	243545	gpcr, receptor_activity, signal transduction	-
17523	TAS2R49	NM_176889.1	536	tatccatctagctagcaacttgata	243571	gpcr, receptor_activity, signal transduction	-
17524	TAS2R50	NM_176890.1	547	tgtatctctcatcacttactctc	243579	gpcr, receptor_activity, signal transduction	-
17525	TAS2R60	NM_177437.1	137	aggtctctagctgaaatgtgtgtg	243583	gpcr, receptor_activity, signal transduction	-
17526	VIPR2	NM_003382.3	344	ctatgctctctgctgcaactctcag	243602	gpcr, receptor_activity, signal transduction	vasactive intestinal polypeptide

图46 (续上)

[illegible]

圖 46 (續 a)

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17557	M160	NM_174941.2	3801	cagcttcgcccctttctctcaaga	245061	-	receptor activity	-	scavenger receptor
17558	WARGO	NM_004770.2	1408	cagcttcctctctctctctctcaaga	245084	-	receptor activity	-	-
17559	MSRI	NM_024445.2	768	cagcttcctctctctctctctctcaaga	245109	-	receptor activity	-	prostate cancer (前立腺癌)
17560	SRGB4D	NM_067441.1	771	cagcttcctctctctctctctctcaaga	245138	-	receptor activity	-	-
17561	B2M	NM_000404.2	379	ctctctctctctctctctctctcaaga	245153	-	see also 2730 line	-	-
17562	HLA-E	NM_005163.3	416	agcagcgcagagatctctctcaacc	245175	-	receptor activity	-	MHC class I receptor
17563	HLA-F	NM_010950.1	1081	gggtctctctctctctctctctcaaga	245180	-	receptor activity	-	MHC class I receptor
17564	MRI	NM_001531.1	71	ctcggcgcacctctctctctctctcaaga	245188	-	receptor activity	-	-
17565	ULBP3	NM_024518.1	387	ctcggcgcacctctctctctctctcaaga	245220	-	receptor activity	-	-
17566	CD74	NM_004335.1	615	ctcggcgcacctctctctctctctcaaga	245226	-	receptor activity	-	chaperone
17567	HLA-DMB	NM_002118.3	501	ttctcgaatgctctctctctctcaaga	245231	-	receptor activity	-	chaperone
17568	HLA-DOA	NM_002119.2	226	gttttgctctctctctctctctcaaga	245238	-	receptor activity	-	MHC class II receptor
17569	HLA-DOB	NM_002120.2	505	caaggaatactcaagatcaagtctg	245249	-	receptor activity	-	MHC class II receptor
17570	HLA-DPA1	NM_033554.2	259	ggctctctctctctctctctctcaaga	245265	-	receptor activity	-	RNA polymerase II transcription factor, enhancer binding
17571	HLA-A	NM_002121.4	721	ctctccgcagatcaagatctctcaaga	245275	-	receptor activity	-	transcription factor
17572	HLA-A	NM_020056.1	244	cgcgcagatctctctctctctcaaga	245280	-	-	-	MHC class II receptor
17573	DOB1	NM_002123.2	164	agattttctctctctctctctcaaga	245292	-	receptor activity	-	MHC class II receptor
17574	HLA-A	NM_182349.1	181	gtctgagcagatctctctctcaaga	245295	-	receptor activity	-	-
17575	HLA-DRA	NM_019111.2	186	ctctcccaatcagctctctctcaaga	245295	-	receptor activity	-	transcription factor
17576	TNFRSF1A	NM_001065.2	666	aagaaacacagtcagctctctcaaga	245302	-	apoptosis, signal transduction, kinase related	-	tumor necrosis factor receptor, type I
17577	TNFRSF19	NM_018647.2	437	actgaatactgtctctctctcaaga	245330	-	apoptosis, kinase related	-	-
17578	TNFRSF1B	NM_001066.2	895	cagctctgtgtctctctctcaaga	245358	-	apoptosis, signal transduction	-	tumor necrosis factor receptor
17579	XEDAR	NM_021783.2	751	ggctctctctctctctctctcaaga	245371	-	receptor activity, transcription, signal transduction	-	tumor necrosis factor receptor
17580	TNFRSF14	NM_003820.2	465	aagctcagctctctctctctcaaga	245373	-	apoptosis, signal transduction	-	NGF/TNF (6 C-domain) receptor

図4 (続き)

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17581	FLJ30296	NM_173495.1	690	gaagcgcgatacaagcttacc	245401	-	-	-	-	-	-	atherosclerosis(粥状硬化症)、Niemann-Pick disease(ニーマン・ピック病)
17582	NP01	NM_000271.1	3934	gaagcgaagcgtctcgaattt	245583	-	-	-	-	-	-	-
17583	NP01	NM_013389.1	1222	gaagcgaagcgtctcgaattt	245583	-	-	-	-	-	-	-
17584	PTCH	NM_002844.2	567	gaagcgaagcgtctcgaattt	245632	-	-	-	-	-	-	-
17585	PTCH	NM_003738.2	1410	gaagcgaagcgtctcgaattt	245632	-	-	-	-	-	-	-
17586	XP01	NM_015024.2	3233	gaagcgaagcgtctcgaattt	245788	-	-	-	-	-	-	-
17587	OD14	NM_000591.1	483	gaagcgaagcgtctcgaattt	245798	-	-	-	-	-	-	-
17588	UNC5C	NM_007728.2	1213	gaagcgaagcgtctcgaattt	245833	-	-	-	-	-	-	-
17589	ROBO1	NM_002941.2	1255	gaagcgaagcgtctcgaattt	245896	-	-	-	-	-	-	-
17590	RRBP1	NM_004587.1	2732	tcagcgaagcgtctcgaattt	246007	-	-	-	-	-	-	-
17591	AGER	NM_001136.3	1207	gaagcgaagcgtctcgaattt	246018	-	-	-	-	-	-	-
17592	OD3D	NM_000732.1	194	tgagcgaagcgtctcgaattt	246029	-	-	-	-	-	-	-
17593	OD3E	NM_000733.1	439	tcagcgaagcgtctcgaattt	246049	-	-	-	-	-	-	-
17594	OD3G	NM_000073.1	218	atagcgaagcgtctcgaattt	246056	-	-	-	-	-	-	-
17595	CLDN3	NM_001306.2	605	ctagcgaagcgtctcgaattt	246079	-	-	-	-	-	-	-
17596	CLDN4	NM_001305.3	910	gaagcgaagcgtctcgaattt	246087	-	-	-	-	-	-	-
17597	CR2	NM_001877.1	2537	atagcgaagcgtctcgaattt	246181	-	-	-	-	-	-	-
17598	DCC	NM_005215.1	3754	ccagcgaagcgtctcgaattt	246278	-	-	-	-	-	-	-
17599	EDAR	NM_022338.1	685	gaagcgaagcgtctcgaattt	246292	-	-	-	-	-	-	-
17600	EV2A	NM_014210.1	404	ctgaagcgaagcgtctcgaattt	246311	-	-	-	-	-	-	-
17601	GPC1	NM_002081.1	956	ctagcgaagcgtctcgaattt	246327	-	-	-	-	-	-	-
17602	GPC5	NM_004466.3	2042	ctagcgaagcgtctcgaattt	246404	-	-	-	-	-	-	-
17603	GPC6	NM_005708.2	766	gaagcgaagcgtctcgaattt	246408	-	-	-	-	-	-	-
17604	ICAM1	NM_000201.1	1330	tgagcgaagcgtctcgaattt	246435	-	-	-	-	-	-	-

図46 (続き)

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17605	IGSF6	NM_005849.1	177	gagccgctccaccataaattatc	246442	receptor activity, signal transduction	-
17606	IL17RD	NM_017563.1	652	ttgtttacagcggagacaattgac	246460	see also 7033 line	-
17607	KLRA1	NM_006811.1	558	cgagctctctctggagaaact	246503	receptor activity, signal transduction	-
17608	LRR021	NM_015361.3	634	atctgacgcgcctcttgacc	246513	-	-
17609	LTBR	NM_002342.1	407	gtccacattgccgagaattcc	246528	receptor activity, apoptosis, signal transduction, kinase related	receptor
17610	LU	NM_005581.2	172	cgaggacccaccaccttatg	246549	receptor activity, signal transduction	transmembrane receptor
17611	M6PR	NM_002355.2	195	aggactgactctctactact	246556	receptor activity	-
17612	MFRP	NM_031433.1	1199	aggacagctcagctttgactac	246579	receptor activity	-
17613	NCR2	NM_004828.2	723	tcactctgttgggggacatagg	246586	-	-
17614	NGFR	NM_002507.1	681	ggatctctgcccgttgatcac	246590	receptor activity, apoptosis, signal transduction	transmembrane receptor
17615	PLXN3	NM_017514.1	5543	tgatgttgagatgatactcgaa	246618	receptor activity	-
17616	SARM1	NM_015077.1	549	tgacagctgtctctatgtgac	246626	see also 6925 line	-
17617	SFRP1	NM_003012.2	750	tgcccgagatgctcaagtctga	246639	receptor activity, apoptosis, signal transduction	-
17618	SFRP4	NM_003014.2	1153	gggacacacgcgcgttaatacc	246684	see also 2018 line	-
17619	SFRP5	NM_003015.2	1059	ttcagcaaatcaatctcttc	246686	see also 2020 line	-
17620	SORL1	NM_003105.3	3593	gtccggagctgacgctacaact	246742	receptor activity	transmembrane receptor
17621	TRAP	NM_003287.2	398	ctgactctcgtatcagctacac	246819	receptor activity	-
17622	TLR5	NM_003286.3	1244	tgactctgcagctaatgttgt	246845	receptor activity	transmembrane receptor
17623	TLR7	NM_016962.2	2770	aagggctatcagctctatctc	246973	see also 6915 line	-
17624	TLR9	NM_017442.2	3421	cagccgaagcagctgtttgac	247004	receptor activity	-
17625	TNFRSF10 C	NM_003841.2	621	tttgactctctgggatgatacc	247009	receptor activity, apoptosis, signal transduction	transmembrane receptor
17626	TNFRSF5	NM_001250.3	260	ttctgctgaagcgaattcttag	247015	receptor activity, apoptosis, signal transduction, kinase related	atherosclerosis(粥状硬化症), Alzheimer disease(アルツハイマー病), arthritis(関節炎), Kaposi's Sarcoma(カポジ肉腫)

図46 (続き)

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17627	TNFRSF6	NM_000043.3	1212	aagcctatgcacattgtaaaa	247043	-	receptor activity, apoptosis, signal transduction	lupus erythematosus (関節炎リウマチーデー), bladder transitional cell carcinoma (膀胱移行上皮癌), leukemia (白血病), autoimmune lymphoproliferative syndrome (免疫増殖的慢性リウマチーデー), systemic lupus erythematosus (全身性リウマチーデー), Alzheimer disease (アルツハイマー病), arthritis (関節炎)
17628	TNFRSF7	NM_001242.3	618	cagcccccaccctaccctatgt	247049	-	receptor activity, apoptosis, signal transduction	-
17629	TNFRSF8	NM_001243.2	1595	cgggaagcgcgggttaagtcgc	247062	-	receptor activity, signal transduction	leukemia (白血病)
17630	WSX1	NM_004843.2	1574	ctgtcggaggtccctctcgaatc	247077	-	receptor activity, signal transduction	-
17631	LOC51038	NM_015854.1	132	gagcaacagagcagcgaatc	247083	-	receptor activity, signal transduction	-
17632	LY96	NM_015384.2	253	agagctcaaaagattatgcaca	247085	-	receptor activity, signal transduction	-
17633	PVRL1	NM_002855.2	91	cagtgtaacgactccatgtatgg	247104	-	see also 1387 line	-
17634	PVRL2	NM_002856.1	1015	cagtgtaacgactccatgtatgg	247116	-	receptor activity	-
17635	2P2	NM_003460.1	1081	gagtcacccgtttctatagtaac	247145	-	see also 2347 line	-
17636	CR1	NM_000573.2	4326	cagtcctcagatcccaatgaag	247182	-	receptor activity	-
17637	ITPR1	NM_002222.1	7136	gggttaaacaccagctgtttct	247353	-	see also 1411 line	Alzheimer disease (アルツハイマー病)
17638	ITPR2	NM_002223.1	6428	cagacctctatctgcacacata	247528	-	channel, receptor activity, signal transduction	-
17639	PLAUR	NM_002659.1	759	aagcctgtactctgaagctttt	247584	-	kinase related, receptor activity, signal transduction	atherosclerosis (粥状硬化症)
17640	AHS2	NM_152392.1	1930	cagctgaaccccccaatggttg	247609	-	receptor activity	-
17641	APL1	NM_014336.2	489	agctgaagccccagctatgac	247618	-	receptor activity	-
17642	ANTXR1	NM_018153.2	792	aagagctcctgctgaagtaact	247634	-	receptor activity	-
17643	BTN1A1	NM_001732.1	922	cagtcagagctcaagcgaagtg	247657	-	receptor activity	-
17644	BTN3A2	NM_007047.2	1225	gactctctgcctatcccaataa	247659	-	receptor activity	-
17645	BTN1.3	NM_006707.2	968	acgagagctatccctgcttcttc	247677	-	receptor activity	-
17646	Cbr633	NM_133387.1	610	tgcctctgagctgttcccaatc	247686	-	receptor activity	-
17647	Cbr160	NM_015439.2	395	ctgcctgctgttcccaatgaac	247711	-	receptor activity	-
17648	CD160	NM_007053.1	319	aggaagcgaagcgaactaactta	247721	-	receptor activity, signal transduction	-
17649	CD200R	NM_138806.2	553	tgatatacctccaagctttgag	247754	-	receptor activity	-
17650	CD36	NM_000072.1	795	aattaaatttccaaatgacaca	247766	-	see also 48 line	-
17651	CD7	NM_006137.5	705	atctctgtgcggagataagaatt	247826	-	receptor activity, signal transduction, kinase related	-

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17652	CD86	NM_006889.2	949	aacgcctcgcgaactataaa	247860	-	receptor activity, transcription_regulator	-	receptor activity, transcription_regulator
17653	CNGB1	NM_001287.1	2947	ctctaccacagatgacttgg	247867	-	channel	-	potassium channel
17654	CNGB3	NM_019098.2	1475	aagcaattggaactgacttga	247950	-	see also 1704 line	-	-
17655	CNTNAP1	NM_003632.1	2545	gcctctctatgcgtcgaactt	248005	-	receptor activity, signal transduction	-	receptor
17656	CRL3	NM_139017.3	1256	ctggcgatcgcgaagaataat	248068	-	receptor activity, kinase_related, transcription_regulator, or, apoptosis,	-	-
17657	CRLP3	NM_015986.2	656	aggtccactggttgaaatgtac	248108	-	signal transduction	-	-
17658	CRSP3	NM_004830.2	3390	tgccagactagctgctacgtgg	248233	-	receptor activity, or	-	-
17659	CRSP6	NM_001288.3	1579	cagcttgacgaactcggaattgg	248302	-	see also 2866 line	-	-
17660	DKFZP434	NM_032137.2	1234	gattgtctgcacacagaagc	248322	-	-	-	-
17661	DNAJ	NM_032364.4	1283	cagcgtgctgaagaatgttca	248366	-	-	-	-
17662	EBAG9	NM_004215.3	963	aagcacacgctcaatgaagaag	248424	-	see also 2822 line	-	-
17663	EP88	NM_004447.3	304	atgaattgctacagctatcacc	248427	-	see also 2381 line	-	-
17664	EP88L1	NM_017729.2	1164	atggctctgtgttaattatgact	248504	-	kinase related,	-	-
17665	EP88L2	NM_022772.2	1623	atggccacgaactcatagaaga	248517	-	receptor activity	-	-
17666	EP88L3	NM_024526.2	444	atgtacgctbaacacatgttcc	248520	-	receptor activity	-	-
17667	FORH1	NM_052938.3	1149	caaggcagctgaagctatataat	248548	-	receptor activity	-	-
17668	FEM1B	NM_015322.2	805	atggctgctgctctgaagaca	248560	-	see also 6354 line	-	-
17669	FKSG87	NM_032029.1	643	ggctctcagcagctctcttgg	248611	-	receptor activity	-	-
17670	FLJ10587	NM_018149.2	30	ggctctcagcagctctcttgg	248622	-	see also 7284 line	-	-
17671	FLVCR	NM_014053.1	1843	aagcagtcagatcagcacttgg	248721	-	receptor activity	-	-
17672	FRAG1	NM_014489.1	917	tgccagacacgtgtttggaag	248730	-	receptor activity	-	-
17673	FRB5	NM_037388.2	803	aagcactcctgctgctactgg	248739	-	receptor activity	-	-
17674	GAGARAP	NM_031412.1	432	gtgctctctactactacttgg	248744	-	-	-	-
17675	GAG1	NM_006338.1	811	cgctctcagcagctcactcttca	248747	-	receptor activity, signal transduction	-	ONS Tumours(中枢神経線維)
17676	GFR1A	NM_005264.2	1289	aggactctctccagtcgaattcc	248766	-	see also 3701 line	-	-
17677	GFR4A	NM_027139.2	120	gccttgcctcctcagtcattgg	248782	-	receptor activity	-	-
17678	GOSR1	NM_004871.1	143	atggaagcgcgcagcagataat	248787	-	-	-	-
17679	GPA33	NM_005814.1	952	caagcaacagctggttaactc	248825	-	-	-	-
17680	GYPB	NM_002100.2	258	tggtgtgtgctgctctattat	248827	-	receptor activity	-	Smad3/Sp-1 heterodimer
17681	HAVCR1	NM_012206.1	898	ctctacggccatcatccctaaagg	248844	-	-	-	-

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		546		colorectal cancer(大腸癌), mutated in colorectal cancers(結腸直腸癌), colorectal cancers(結腸直腸癌), squamous cell cancer(扁平上皮癌)	
				receptor activity, signal transduction, cell cycle	receptor
17708	MCC	NM_002387.1	1888	tttgcacacccgttctactaaag	249881
17709	MCP	NM_002389.3	326	gtgaacgtttgattatgaatt	249899
17710	MED6	NM_005466.1	127	gtgtgtgtgtgtgtgtgtgtgt	249942
17711	MED6	NM_153350.2	1421	gtttctcgaacttgcgaactctg	249960
17712	MGC4766	NM_031451.3	791	ttttccgaacgaactactaaata	249972
17713	MIP-13	NM_015650.2	1430	tattcttggtttgtgtgaatctt	250000
17714	MMD	NM_012329.1	375	gtttgtataaagttctctatt	250021
17715	MPRA	NM_178422.2	1102	ctgtgtacagcgaactgtgaca	250054
17716	MS4A4A	NM_024021.2	213	atgttgtctatcatcttcattct	250055
17717	MS4A5	NM_023945.2	415	caaaactctgtatattttgtgc	250078
17718	MS4A6A	NM_022349.2	645	ctgtcaaacgtgacaccttaaat	250088
17719	MS4A7	NM_021201.3	570	ctgtgtgtacttctctaaacttg	250106
17720	MS4A8B	NM_031457.1	262	gtgtgaccccaaatgtttatcc	250117
17721	MTVR1	NM_152832.1	639	tggttaactcaagctactcaaca	250137
17722	NCRI	NM_004829.3	319	gggtcaatacagctgtcatctatg	250142
17723	NGR3	NM_147130.1	728	ctgtgtgtgtgtgtgtgtgtgtgt	250151
17724	NEGL1	NM_021189.2	465	gtgaccttctgataatacgaatt	250163
17725	NGR2	NM_178568.1	243	gtgtgtctactgtgacaacactaa	250169
17726	NUSCH	NM_007184.1	651	cttctgttctactgtatctatt	250184
17727	OGFRL1	NM_024576.2	1021	acgtttctccgaacacactaca	250245
17728	OSCAR	NM_130771.1	343	gggttaactgtgtgtgtgtgtgtg	250260
17729	PILRA	NM_013439.2	1003	atgtgtgtgtgtgtgtgtgtgtgt	250269
17730	PKHD1	NM_138944.2	2085	gggtgtgtgtgtgtgtgtgtgtgt	250301
17731	PLXDC1	NM_020405.3	338	gtgtgtgtgtgtgtgtgtgtgtgt	250348
17732	PLXDC2	NM_032812.2	1197	atgtgtgtgtgtgtgtgtgtgtgt	250572
17733	PLXNB3	NM_005395.1	297	gtgtgtgtgtgtgtgtgtgtgtgt	250597
17734	PLXND1	NM_015103.1	5790	gtgtgtgtgtgtgtgtgtgtgtgt	250642
17735	POINW	NM_032352.1	747	gtgtgtgtgtgtgtgtgtgtgtgt	250659
17736	PPFAT1	NM_003626.2	461	agttgtgtgtgtgtgtgtgtgtgt	250666
17737	PROR	NM_006404.3	825	gtgtgtgtgtgtgtgtgtgtgtgt	250723
17738	PRV1	NM_020406.1	152	gtgtgtgtgtgtgtgtgtgtgtgt	250742
17739	PSK-1	NM_012410.1	2613	gtgtgtgtgtgtgtgtgtgtgtgt	250762
17740	PVR	NM_006505.2	1248	gggtgtgtgtgtgtgtgtgtgtgt	250790

poliovirus infection(灰白腦炎)

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17741	RAMP2	NM_005954.1	230	aggaggaagagctgaagactatg	250794	receptor activity, signal transduction	receptor	-
17742	RAMP3	NM_005956.1	217	tcctatatactgaagatttcac	250803	receptor activity, signal transduction	receptor	-
17743	RAMP8	NM_012920.2	1971	ggagagcagactccttgcttcc	250836	receptor activity, signal transduction	receptor	-
17744	RAMP1	NM_005953.3	962	cctcctatgcccacacacaga	250843	-	-	-
17745	RHD01	NM_022490.2	2400	cctcccgagattgacaacttgc	250861	-	-	-
17746	RIF1	NM_018372.2	2189	cctcctataagcaactataaat	250901	-	-	-
17747	RILP	NM_031430.1	1021	cagagagcaagcaactacaagc	250912	-	-	-
17748	RNF139	NM_007218.3	2017	tcctatcaccttctatcatt	250978	see also 5028 line	-	-
17749	RNF4R	NM_023004.4	1695	tggcccgagcactcaactgact	250995	receptor activity, channel	receptor	-
17750	RYR1	NM_000540.1	2244	ggctcggcctgacctatctcc	251016	receptor activity, channel	receptor	-
17751	SCARB1	NM_005505.3	906	cctccatcatcatgaagcaaatg	251126	receptor activity	-	-
17752	SCARB2	NM_005506.2	1601	cggcagatcgactgaactctatg	251177	see also 3947 line	-	-
17753	SCARF2	NM_153334.3	512	acgtcacagccagctactctt	251183	receptor activity	-	-
17754	SDFR1	NM_012428.1	709	cctatctcactcctcagaactc	251205	receptor activity	-	-
17755	SEMA4B	NM_020210.2	2340	gtggcagctaccctctatcttc	251239	receptor activity	-	-
17756	SEMA4C	NM_017789.3	758	tgcctcaagcaactcattctct	251247	receptor activity	-	-
17757	SEMA4D	NM_008378.2	1184	ttcctctaacagcactcatttgc	251272	receptor activity, apoptosis	receptor	-
17758	SEMA4F	NM_004263.2	744	cctgacttgagcaactccttgc	251304	see also 2882 line	-	-
17759	SEMA4G	NM_017853.2	718	cagacagctcttcttaccctct	251328	receptor activity	receptor	-
17760	SEMA5A	NM_003966.1	2813	cgacaaagctcctccctaccctg	251387	receptor activity	receptor	-
17761	SIAMF8	NM_059311.3	815	gagatccctcacttgcctact	251439	receptor activity	-	-
17762	SIAMF7	NM_021811.3	212	aagggggcctctctatgtgacc	251456	receptor activity	-	-
17763	SLC1A5	NM_005698.1	1988	ctctaccctctcactgtagaag	251483	receptor activity	sodium/dicarboxylate cotransporter	-
17764	SLC20A1	NM_005415.3	1593	aaggtcttcgctctctacaaaga	251512	see also 3781 line	-	-
17765	SLC20A2	NM_005749.3	547	gtcttctatgctccaaagttagg	251539	receptor activity	-	-
17766	SPAP1	NM_030764.2	1206	caggaccctgtgctatgagaga	251588	-	-	-
17767	TGFBRAP	NM_004257.3	847	tgcctctctctgcaattcttc	251602	receptor activity, signal transduction	-	-
17768	TP47	NM_005817.2	543	gaacagccttgacagacaaagt	251632	receptor activity	-	-
17769	TNFRSF10D	NM_003840.2	542	atcttcccgagctgtagaacag	251636	receptor activity, apoptosis	transmembrane receptor	-
17770	TNFRSF11A	NM_003839.2	661	acatttacttccagatttaata	251656	receptor activity, signal transduction	receptor	-
17771	TNFRSF13B	NM_012452.2	89	tgaacagggcttgctatgagulo	251670	receptor activity, signal transduction	receptor	-

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17772	TNFRSF17	NM_001192.2	666	gaaggaagcgaacattcttctgt	251687	-	receptor_activity, signal transduction	-	receptor	-
17773	TNFRSF19	NM_032871.3	1272	agatttcctcctactcgaattcc	251683	-	receptor_activity	-	-	-
17774	TNFRSF21	NM_014452.3	566	tgcacatacgaacttgcac	251689	-	-	-	-	-
17775	TNFRSF9	NM_001561.4	671	aggaactctcgcagactct	251738	-	receptor_activity, apoptosis	-	receptor	-
17776	TRP3	NM_012470.1	1708	tatccgaatbaacttgcataag	251803	-	receptor_activity, transcription_regulation	-	-	-
17777	TRAP20	NM_005121.1	2532	ctggaccctactctgcataag	251891	-	-	-	-	-
17778	TREM1	NM_018643.2	184	atctgacacacgcgcagagagt	252010	-	receptor_activity	-	-	-
17779	TREM2	NM_018985.1	282	tcttcgacacgaacactctgag	252025	-	receptor_activity	-	-	-
17780	TREM5	NM_174892.1	202	agggctccctgcagcttcaatgc	252030	-	receptor_activity	-	-	-
17781	TRP3	NM_004773.1	454	ttccagactcctctttgaagatt	252049	-	transcription_regulation or	ligand-dependent	thyroid hormone receptor	interactor
17782	TRPC4	NM_018179.1	1500	tctggagctctgcagactcctcc	252091	-	see also 6708 line	-	-	-
17783	TRPC7	NM_020389.1	927	cgggtataaacctgccttaaat	252167	-	see also 7881 line	-	-	-
17784	TRPM8	NM_020080.3	2796	tgatgtgcacacgtatctactt	252256	-	see also 8588 line	-	-	-
17785	TRPV2	NM_016113.3	509	cggaaattcccccctgcagtaag	252257	-	-	-	-	-
17786	TRPV3	NM_145068.2	1197	ggagactcagagcaacacatc	252257	-	see also 9774 line	-	-	-
17787	TRPV4	NM_021625.3	826	tttagctcctctgcacacactac	252322	-	channel	-	-	-
17788	TRPV5	NM_018841.3	1860	ttctcctcgtctatctatcatt	252340	-	receptor_activity, channel	-	-	-
17789	UNC138	NM_006377.2	3416	ttgagcaattgtctgcacataag	252411	-	see also 4469 line	-	-	-
17790	UNC5B	NM_170744.2	2625	agagccgaacccgaactcttctc	252445	-	receptor_activity, signal transduction	-	-	-
17791	WDR31	NM_145241.1	1124	ttctctctctcactcctcttgc	252487	-	-	-	-	-
17792	ZYX	NM_003461.3	980	tgatctgactgcacacacatc	252493	-	signal transduction	-	-	-
17793	APS	NM_020978.1	960	ttgagagggtgcgcgaatgacac	252491	-	signal transduction	-	-	-
17794	ARHGAP4	NM_001866.1	1076	tgatctgaatgcctctgcagag	252497	-	signal transduction	SH3/SH2 adaptor protein	-	-
17795	ARHGAP6	NM_001174.2	2835	actcttgactacttacttcataa	252523	-	see also 764 line	-	-	-
17796	BLNK	NM_011331.2	521	gcatactgacacacacatc	252560	-	see also 5395 line	-	-	-
17797	CRK	NM_005206.2	430	tgagacactacacacttgcataa	252585	-	see also 3656 line	-	-	-
17798	GRAP2	NM_004810.2	589	ggatcacacacaggttatctactt	252602	-	signal transduction	SH3/SH2 adaptor protein	-	-
17799	GRB10	NM_005311.2	793	cggccctctgtctcgttgataag	252609	-	-	SH3/SH2 adaptor protein	-	-
17800	GRB14	NM_004490.1	1436	gagaccacactaactatgatttc	252663	-	-	SH3/SH2 adaptor protein	-	-
17801	GRB7	NM_005310.1	935	gggttgcagacggagactgttgc	252697	-	signal transduction	SH3/SH2 adaptor protein	-	-

17802	LASP1	NM_006148.1	125	aggttaactgtctgataatgcttc	252708	-	SH3/SH2 adaptor protein	breast cancer(乳癌)
17803	RUSC1	NM_014328.1	187	cgttcagctctctcgttgataaa	252719	-	-	-
17804	SCAP2	NM_003930.3	556	tagctctcagaagatgatataaa	252739	-	-	see also 2688 line
								Epstein-Barr virus infection(EBウイルス感染)
17805	SH2D1A	NM_002351.1	432	gtctctatcaagcttcaattta	252765	-	SH3/SH2 adaptor protein	増殖性表型, infectious mononucleosis(伝染性単核症), lymphoproliferative syndrome (Duncan's disease)(リンパ増殖性疾患)
17806	SH2D3C	NM_005489.1	114	tagctctcagctcgtctatgtaag	252780	-	SH3/SH2 adaptor protein	-
17807	SH3BP8	NM_007341.1	238	ctgagctcatagcgttgtagaag	252788	-	SH3/SH2 adaptor protein	-
17808	SH3BGRL	NM_003022.1	110	ctgctctcagcgttgtagaag	252796	-	SH3/SH2 adaptor protein	-
17809	SH3BP2	NM_003023.2	1782	tgagcgcgaacctctctacaagt	252814	-	SH3/SH2 adaptor protein	cherubism(ケルビム症)
17810	SH3BP5	NM_004844.1	153	cagacggagagctgaacttgag	252821	-	SH3/SH2 adaptor protein	-
17811	SHB	NM_003028.1	1708	ggctcttaagcctctacaacatg	252842	-	SH3/SH2 adaptor protein	-
17812	SLA	NM_006748.1	266	atctctgccaagctgttaccatg	252856	-	-	-
17813	SNX9	NM_018224.3	1642	tgaaatgtaactcagcagatataa	252885	-	-	-
17814	STAM	NM_003473.2	1339	atgaacgaagctcgtgtctttc	252935	-	-	see also 6729 line
							-	see also 2349 line
17815	TP53BP2	NM_005426.1	1745	aattgtctcgtctctcaatgttt	252963	-	SH3/SH2 adaptor protein	apoptosis, cell cycle
17816	PAG	NM_018440.2	955	cagacacgaacagctgaactaac	253016	-	SH3/SH2 adaptor protein	kinase related, signal transduction
17817	SHC1	NM_003029.3	521	tgccgcagactgcaaacagatc	253029	-	-	see also 2031 line
17818	TRIM	NM_016388.1	467	atgtctctagctcacttgatca	253059	-	-	kinase related, signal transduction
17819	AKAP12	NM_005100.2	2072	ggcgaacagcgtgtatadagag	253106	-	-	kinase related, signal transduction
17820	AKAP3	NM_005422.2	1053	agctctctgtctcgtctgtgt	253160	-	-	see also 4468 line
17821	AKAP4	NM_003886.2	2162	aagcaacgaacaggcgaaattat	253244	-	-	kinase related, signal transduction
17822	AKAP6	NM_004274.3	374	gggtccgagctgaacttaactatca	253261	-	protein kinase A anchor protein	-
17823	AKAP7	NM_004842.2	271	aagccgaacgaactgaactagt	253435	-	kinase related	-
17824	PDCL	NM_005388.2	1012	ctgaactctgtctgaactctgc	253489	-	-	see also 3759 line
17825	ODIN	NM_001770.3	805	aagacgtctgaagatctatgt	253480	-	signal transduction	DNA binding
17826	FLRT2	NM_013231.2	1176	ggagtcgcgtcaggaagaataaa	253520	-	receptor signaling protein	multiple myeloma(多発性骨髄瘤)
17827	MADH1	NM_005900.1	1793	tggttcaactctatctctatt	253568	-	-	see also 4110 line
17828	MADH5	NM_005903.4	605	aagccttaacccctctattatnt	253575	-	-	see also 4113 line

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17829	MS4A1	NM_021950.2	882	ctgtgtgacgaactgaacac	253630	receptor activity, signal transduction	receptor signaling protein	leukemia (白血球)
17830	NSMAF	NM_003560.2	988	gtttctgacatcactcaaaat	253655	see also 2376 line		
17831	RGS14	NM_008480.3	1299	gagccgctgctgaagaaatcagc	253781		GTPase activator	
17832	SIVA	NM_008427.2	511	catctacatctgaggaagatgc	253785		apoptosis	
17833	TBL3	NM_008453.2	1298	ctctccatctctgaggaagac	253795		see also 4524 line	
17834	TIAM1	NM_003253.1	5196	tgggttagctctgaagctttgc	253874		guanylnucleotide release factor	non-hodgkin lymphoma (非ホジキンリンパ腫)
17835	FST	NM_006350.2	706	ctggcagatctctgttttaggc	253878			
17836	ARHGEF1	NM_004706.3	2258	gaagtggccacgcgatccaaac	253892		cell cycle	
17837	ARHGEF1	NM_014784.2	1927	aagactatgacccgtgttttttc	253909		signal transduction	
17838	ARHGEF2	NM_015313.1	210	tttttaagcttggtaaatc	253957		transcription regulator	
17839	AXIN1	NM_003502.2	882	tgatatacctgcgcaccttaattg		apoptosis		
17840	AXIN2	NM_004655.1	1720	ctggagcctgcgcaccttaattg	254087		signal transduction	hepatocellular carcinoma (肝癌)
17841	BCAR1	NM_014567.1	775	gagcgaagcttatgtatcagac	254118		signal transduction	colorectal cancer (大腸癌), colorectal cancers (結腸直腸癌)
17842	BSG	NM_001728.2	1231	gcctgcgcgcgcgaactcttc	254126		signal transducer	breast cancer (乳癌)
17843	CLTCL1	NM_001835.1	3531	aaagctctctgctctctctctga	254134		signal transducer	
17844	DIXO1	NM_033425.1	1700	aggaatacagctgctctctctga	254204			Di George syndrome (ディジョージ症候群)
17845	DKF7P434	NM_015868.1	3313	aagagctgagccctatgatt	254244			
17846	DKKL1 - pending	NM_014419.1	458	ggggagctctgagctgattga	254347			
17847	DRCTN18	NM_014419.1	458	ggggagctctgagctgattga			signal transducer	
17848	FA	NM_032581.2	1310	cagccactgcgtgttttataaaca		see also 9252 line		
17849	DVL1	NM_004421.2	2024	ggggacactgcgtgttttataaaca	254405		signal transduction	
17849	DVL2	NM_004421.2	1539	ctctgagcactgcgtgttttataaaca	254432		signal transduction	schizophrenia (精神分裂病)
17850	GASZ	NM_130768.1	571	aggttactactgttttaacgtgc	254483		signal transducer	
17851	KCNH7	NM_033272.2	759	gttgtatgcgtatctataaaga	254515		see also 9392 line	
17852	KOC13913	NM_173493.1	351	ctgactgcgtatctatagatgc	254617		signal transduction	
17853	LY86	NM_004271.1	150	caagatttcgcatctataaaga		apoptosis		
17854	NPAS3	NM_022123.1	973	agttgactactgataaatat	254657		signal transducer	
17855	NXF	NM_178864.2	1088	ggagccctatctgacataact	254683		see also 9284 line	
17856	POCD1	NM_005018.1	125	agcagcagagctgctgttagact	254714		see also 10227 line	
17857	PER1	NM_002616.1	3304	catgagcctgcgaactcgc	254725		apoptosis	systemic lupus erythematosus (全身性エリテマトーデス)
17857	PER1	NM_002616.1	3304	catgagcctgcgaactcgc	254755		signal transducer	

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					signal_transduction	advanced sleep phase syndrome (睡眠相前送症)
17858	PER2	NM_003894.3	829	tagctcttcacacgcttgaacc	254784	-
17859	PER3	NM_018631.1	1084	taaaacatcatcatcaaaacac	254815	-
17860	PLEKHB1	NM_021200.1	1027	ttgctctccacacgcttgaacc	254872	-
17861	PP1R12A	NM_002480.1	2269	caagctctatgacgcttgaacc	254911	-
17862	PWP2H	NM_005049.1	121	catctccctctgacacgaagctca	254939	-
17863	RGS13	NM_002927.3	444	atgacacagcagcagctatctca	254974	-
17864	RGS17	NM_012419.3	545	atgacacagcagcagctatctca	254988	-
17865	RGS18	NM_130782.1	805	atgacacagcagcagctatctca	254999	-
17866	RGS5	NM_003931.1	452	agctctcaaaagcagcttgaatt	255022	-
17867	RGS9	NM_003345.1	211	aagctcaactctgctgagcttt	255025	-
17868	RGS1	NM_181572.2	1049	caagctcaaacggcagctatctca	255068	-
17869	RGS12	NM_032207.1	765	tcctctataacagcgttctca	255107	-
17870	RTN1	NM_021138.1	569	ttgactctctgctgcttgaatt	255126	-
17871	RTN2	NM_005619.2	1000	ttgacgaacacatagaattca	255157	-
17872	SH3BP4	NM_014521.1	692	gcttcaacgctatctgattga	255178	-
17873	SHG3	NM_016848.2	1212	gcttccgctgttgaacacattt	255214	-
17874	SNX13	NM_015132.2	2618	gcttcaactctgctgcttgaatt	255298	-
17875	SNX25	NM_031953.2	1330	gaacacctaaagctatgattta	255331	-
17876	TM4SF3	NM_004616.2	474	caagctgagcagcagctatctcc	255382	-
17877	WNT1	NM_005430.2	812	caagcctgacacgctatctcc	255405	-
17878	WNT10A	NM_025216.2	1170	gagacatccacgctatctcc	255412	-
17879	WNT10B	NM_003394.2	677	aagcgcgcttctgagcaaacctc	255415	-
17880	WNT11	NM_004626.2	1038	aagcgcgcttctgagcaaacctc	255421	-
17881	WNT16	NM_010087.2	651	agcgtctcaacgcttgaattca	255423	-
17882	WNT2	NM_003391.1	405	caagcttatctgctatctga	255433	-
17883	WNT2B	NM_004185.2	1163	gtgagcttcaactctcaaacgc	255470	-
17884	WNT3	NM_030753.3	604	cttactgagctctgcttgaattc	255480	-
17885	WNT3A	NM_033131.2	807	ttgacccacgctgcttgaattc	255486	-
17886	WNT5B	NM_030775.2	756	ctgctccacgagcgtctgaag	255503	-
17887	WNT6	NM_005622.2	570	ctgctccacgagcgtctgaag	255510	-
17888	WNT7B	NM_005238.1	888	ctgctccacgagcgtctgaag	255512	-
17889	WNT8A	NM_031933.1	132	ccagctgagctcaacgcttga	255516	-
17890	WNT8B	NM_003393.2	1170	ccagctgagctcaacgcttga	255537	-
17891	WNT9A	NM_003396.1	908	agcgtctgagcagcactcaag	255537	-
17892	CORF1	NM_010368.1	451	ttggttatatgaggaattga	255548	-
17893	SEC61A1	NM_013336.2	464	ttgctctgagcaggaattga	255572	-
17894	SEC61G	NM_014302.2	720	aagctcagcagcttgaagctt	255632	-
17895	TM1M17A	NM_006335.1	499	ttgagctctgacacataatg	255652	-
17896	TM1M17B	NM_005634.1	197	ttgagctctgacacataatg	255653	-
17897	TM1M22	NM_013337.1	233	ctctctgagcagcttgaag	255656	-
17898	TM1M23	NM_006327.1	406	ttgctctgagcagcttgaag	255674	-

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17899	TMMAA	NM_004085.2	235	ttatgcctcattgatacaagc	255682	-	-	protein translocase	deafness (型)
17900	SLC6A6	NM_003043.1	388	cgcctatgcctctcttgaattc	255686	-	see also 2038 line	-	anxiety-related traits (本型に関連した形質)、 alcoholism (アルコール依存症)、Alzheimer disease (アルツハイマー病)
17901	SLC6A4	NM_001045.2	408	tgatgcctgcgcgaataatcaat	255715	-	-	serotoninsodium symporter	-
17902	SLC6A2	NM_001043.1	718	gacgcagcgagatcgagacatcg	255753	-	-	noradrenalinesodium symporter	-
17903	SLC6A8	NM_005629.1	652	gacgcagcgagacgacatcagc	255773	-	-	creatinesodium symporter	-
17904	SLC6A9	NM_006934.1	566	ggatgcctgcctcttgatataatg	255780	-	-	-	-
17905	FLJ31236	NM_126522.1	1056	ggatgcctgcgaactatgaact	255795	-	see also 4861 line	-	-
17906	NTTS	NM_01037.1	1575	gagcgcacatggatattgacg	255833	-	-	neurotransmitters odium symporter	-
17907	SLC6A11	NM_014229.1	1552	cgcgcctcctctctctctaatct	255928	-	see also 5547 line	-	-
17908	SLC6A12	NM_003044.2	951	cttgatgcctgcctctctaatctg	255938	-	see also 2048 line	-	-
17909	SLC6A13	NM_018615.2	322	cgcgcctgcgcgagctaacctatgc	255955	-	see also 6952 line	-	-
17910	SLC6A14	NM_007231.1	1194	tgagcacatgcccctctatctct	256006	-	see also 5043 line	-	-
17911	SLC6A3	NM_001044.2	481	tgccctcctgcctctctcaacagc	256027	-	see also 640 line	-	-
17912	SLC6A5	NM_004211.1	2395	atgctctctaccctctctctaac	256077	-	see also 2820 line	-	-
17913	SLC6A7	NM_014228.2	2124	gagcaacgcagcggcctatgctg	256094	-	-	neurotransmitters odium symporter	-
17914	XT3	NM_020208.1	72	gttgcccaactcgctcaagttcg	256096	-	-	-	-
17915	SLC10A1	NM_003049.1	533	aatgcacagttgcccctataaag	256118	-	-	bile acidsodium symporter	-
17916	SLC10A2	NM_000452.1	885	agccctctatgctgctctctata	256128	-	-	bile acidsodium symporter	-
17917	SLC10A3	NM_018848.2	555	tgccacagttcctctaacctctc	256156	-	-	bile acidsodium symporter	-
17918	SLC10A4	NM_156879.2	1130	cttgacacagctgtagcaagatg	256177	-	-	-	-
17919	SLC5A1	NM_000343.1	1484	ttggatcttccatcagcgatgact	256210	-	-	-	congenital glucose-galactose malabsorption syndrome (先天性グルコース・ガラクトース吸収 不全症)
17920	SLC22A2	NM_005116.4	2162	acgcgcagctgcctcagcttgc	256255	-	see also 3889 line	-	-
17921	SLC38A1	NM_030674.2	1707	ttgatctctgagctgtaactct	256313	-	-	-	-
17922	SLC19A2	NM_003984.1	297	gagttgctgcctgcctgattctaa	256319	-	-	low affinity sodiumdicarboxylat e cotransporter	-
17923	SLC28A1	NM_004213.2	1888	gafctactctccacagctagtgc	256342	-	-	nucleosidesodium symporter	-
17924	SLC28A2	NM_004212.1	1979	caatgctatggcccttactaacct	256379	-	-	purine nucleoside transporter	-
17925	SLC28A3	NM_022127.1	782	ataggatgcctggcctcactgctt	256396	-	-	-	-
17926	SLC15A1	NM_005073.1	2053	ttgatgccttacttacttactc	256461	-	see also 3545 line	-	-
17927	SLC15A2	NM_021082.2	476	tttatgcctgcctgctctatagc	256480	-	see also 8081 line	-	-

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17928	SLG17A5	NM_012434.3	814	ttgtgactgcttaactgta	256532	-	-	-	-	-	-
17929	SLG12A1	NM_000338.1	2169	ttctgagccgcgaacactgct	256631	-	-	-	-	-	-
17930	SLG12A2	NM_001046.2	1907	ttctgattgcttgatgaagaa	256712	-	-	-	-	-	-
17931	SLG12A5	NM_002708.3	1501	ggagccacactctgattctccc	256800	-	-	-	-	-	-
17932	SLG12A7	NM_006598.1	1440	gccttctcttgatgaagaatctc	256829	-	-	-	-	-	-
17933	SLG12A3	NM_000339.1	1311	ctccacacgcgcctcctaact	256845	-	-	-	-	-	-
17934	SLG12A6	NM_005135.1	2058	ctgaacataactgactgactga	256949	-	-	-	-	-	-
17935	SLG13A4	NM_012450.2	2445	cttgagatctcactgctgact	256973	-	-	-	-	-	-
17936	SLC04A	NM_003759.2	2523	actgctctctgctgactgagc	257056	-	-	-	-	-	-
17937	SLC04A5	NM_021196.2	2362	ctgactctctgctgactgagc	257103	-	-	-	-	-	-
17938	SLC04A7	NM_003815.2	2631	aagctgcgactgcactcactga	257169	-	-	-	-	-	-
17939	SLG12A4	NM_005072.3	948	ttggagcaaaactctatatttg	257212	-	-	-	-	-	-
17940	SLG13A1	NM_022444.3	1111	ttctcgaaccccgatttttc	257264	-	-	-	-	-	-
17941	SLG13A3	NM_022829.3	709	atgaatatctctggacatcttg	257296	-	-	-	-	-	-
17942	SLG16A1	NM_000517.2	735	ttggagctctgactaaactgc	257327	-	-	-	-	-	-
17943	SLG16A2	NM_004207.1	1184	ctgaataactctactgtttct	257379	-	-	-	-	-	-
17944	SLG16A3	NM_004207.1	333	ctgtcttgagatctctttgc	257398	-	-	-	-	-	-
17945	SLG16A4	NM_004696.1	725	ttgactctgactgactgactgc	257398	-	-	-	-	-	-
17946	SLG16A5	NM_004695.2	1673	auctcactgctgctgaataagc	257425	-	-	-	-	-	-
17947	SLG16A6	NM_004694.2	452	cggaacccgctctgactgactg	257435	-	-	-	-	-	-
17948	SLG16A7	NM_004731.3	538	ctgcaacccgctcctaactaat	257453	-	-	-	-	-	-
17949	SLG17A1	NM_005074.1	512	ggagccgacttactctatgact	257506	-	-	-	-	-	-
17950	SLG17A2	NM_005835.1	1318	catctctctctcactgaacaa	257571	-	-	-	-	-	-
17951	SLG17A3	NM_006832.1	436	tgaaatacctcctgctctcaact	257581	-	-	-	-	-	-
17952	SLG1A1	NM_004170.3	478	ctgaactggttctcaacgctatcc	257615	-	-	-	-	-	-
17953	SLG1A3	NM_004172.3	908	ggactctctacccgactcagaga	257665	-	-	-	-	-	-
17954	SLC1A4	NM_003036.2	1221	caggaacactctcctctctgactg	257689	-	-	-	-	-	-
17955	SLC1A5	NM_005071.1	1507	ttgaccggtcttctcactgacc	257704	-	-	-	-	-	-
17956	SLC1A7	NM_006871.3	1493	cccttctcgacatgaataacgc	257717	-	-	-	-	-	-
17957	SLC2A1	NM_005847.2	1590	aggagctggtctctgactgactg	257731	-	-	-	-	-	-
17958	SLC2A1	NM_004727.1	378	atttgaatctgctcttactcta	257737	-	-	-	-	-	-
17959	SLC2A2	NM_020344.1	379	aagcgaactctggaataatataca	257782	-	-	-	-	-	-
17960	SLC2A3	NM_020669.3	1234	ttggcagctgcaactgactgaact	257833	-	-	-	-	-	-
17961	SLC3A1	NM_003052.2	923	ttgagctctctctgaataaccagc	257847	-	-	-	-	-	-
17962	SLC5A4	NM_014227.1	298	aggagctctcaccggaacttgc	257853	-	-	-	-	-	-

Gitelman syndrome (hypomagnesemia-hypokalemia)(低カリウム血症)

symporter

see also 3811 line

see also 641 line

see also 7927 line

see also 4831 line

see also 3544 line

see also 8358 line

see also 8485 line

see also 3219 line

see also 3249 line

see also 2801 line

see also 3541 line

see also 7842 line

see also 7842 line

see also 7842 line

see also 7842 line

17963	SLC9A5	NM_000453.1	470	ccacagcctgagacactctaa	257895	-	-	-	thyroid cancer (甲状腺癌), hypothyroidism (甲状腺機能低下症), thyroid hemoneogenesis (甲状腺ホルモン合成障害)
17964	TSOCT	NM_030951.2	1296	ggaaagagcttcacacacagc	257920	-	-	-	
17965	FLJ14153	NM_030558.1	462	gtgtcacagcctctctctcgc	257940	-	-	see also 9247 line	
17966	PIA11	NM_030555.2	1123	aggaattcagatgagatgaaag	257975	-	-	see also 9355 line	
17967	MGC11332	NM_032718.2	341	aggtcctcagatgagatgagag	257982	-	-	see also 9277 line	
17968	LOC13330	NM_179833.2	781	ctctccatcagctcccgatgag	258024	-	-	-	
17969	MGC343028	NM_178572.2	3223	ctctcctcagcgtggaattg	258154	-	-	channel	
17970	SLC9A1	NM_003047.2	1218	tgagcagctgacagatcaaac	258167	-	-	solitehydrogen antiporter	
17971	SLC9A2	NM_003048.3	1651	ttctcagctgtttgcatcttga	258211	-	-	solitehydrogen antiporter	
17972	SLC9A3	NM_004174.1	1494	ccggacacagatcgggcaaatat	258235	-	-	solitehydrogen antiporter	
17973	SLC9A5	NM_004594.1	265	ctctctcgaagaataactctct	258245	-	-	solitehydrogen antiporter	
17974	SLC9A6	NM_003591.1	1453	atccacacgaatgcttctcgc	258292	-	-	see also 4449 line	
17975	SLC9A7	NM_032591.1	936	ctgacacacacagcttctgac	258315	-	-	-	
17976	SLC9A9	NM_179653.1	644	ctctcatctcataggtgtaata	258332	-	-	see also 10103 line	
17977	SLC4A1	NM_000342.1	985	gagaaagctgtccacatacgc	258369	-	-	inorganic anion exchanger	phores-aanthocytosis (有酸素血球病), erythrocytosis (赤血球増加), ovalocytosis (卵形赤血球増加)
17978	SLC4A11	NM_032034.1	173	tgagagatgaagctactacag	258380	-	-	-	
17979	SLC4A2	NM_003040.2	2785	acggagctgagacatgacagc	258430	-	-	-	
17980	SLC4A3	NM_003070.1	847	ttctcctcctcactactgaa	258447	-	-	see also 3540 line	
17981	SLC4A8	NM_004858.1	91	caagctcggagcagacaattct	258460	-	-	see also 3378 line	
17982	SLC7A12	NM_014331.2	1215	tgagctcgtattctcctgatac	258548	-	-	see also 5628 line	
17983	FLJ10847	NM_018242.2	312	ctgcaatctcgcgtatcaatgt	258562	-	-	see also 7341 line	
17984	FLJ31196	NM_159908.2	1286	ttcccctgttattgtcttctca	258613	-	-	-	
17985	OHDC1	NM_015116.1	990	aagctctcgttgatccaatgtt	258644	-	-	-	
17986	FLJ10560	NM_018138.1	316	tgagcttgcttctctcagaata	258693	-	-	-	
17987	FLJ37307	NM_178515.2	536	tgagagcctcctctctctcaga	258740	-	-	-	
17988	HT008	NM_018469.3	3296	ccagctgacagatgattgtag	258810	-	-	-	
17989	KST01	NM_052944.2	851	caagcctgcatctctcttagg	258823	-	-	-	
17990	MGC34837	NM_152377.1	108	aagactccctcagctcagatgc	258835	-	-	-	
17991	NALP13	NM_176810.1	1162	ggagcgaactcagatgatttt	258868	-	-	-	
17992	PTD015	NM_024684.2	148	aagctctcattacaacctataag	258945	-	-	-	

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17983	SLC2A1	NM_006516.1	1547	aggccgagccctgctgagatag	259482	-	-	glucose transport defect, blood-brain barrier (血液脳関門におけるグルコース透過異常), bladder cancer (膀胱癌), diabetes mellitus (糖尿病), endometrial cancer (子宮癌), lung cancer (肺癌), pancreatic cancer (膵臓癌), diabetes (糖尿病), head and neck cancer (頭頸部癌), gastritis (胃炎), diabetes mellitus (糖尿病), diabetes (糖尿病)
17984	SLC2A10	NM_030773.3	151	accacccctcttctgctgacac	259484	-	-	sugar porter
17985	SLC2A11	NM_030807.2	216	agcctctctggagcagctgctgacg	259485	-	-	sugar porter
17986	SLC2A12	NM_145176.1	958	accagacagcagctgacatgacg	259510	-	see also 9178 line	-
17987	SLC2A13	NM_032383.1	906	aggcagctgctgacatgacac	259547	-	-	sugar porter
17988	SLC2A14	NM_153449.2	1121	cgagctgctgctgacatgacac	259559	-	-	-
17989	SLC2A2	NM_000340.1	1338	tgctgctgctgctgacatgacg	259534	-	see also 287 line	-
18000	SLC2A4	NM_001042.1	149	cctcggctgctgacatgacg	259565	-	-	diabetes mellitus (糖尿病), diabetes (糖尿病)
18001	SLC2A5	NM_003039.1	239	atgctgagcagctgacatgacg	259576	-	-	sugar porter
18002	SLC2A6	NM_017585.2	497	ccgtgctgctgctgacatgacg	259578	-	-	sugar porter
18003	SLC2A8	NM_014580.2	864	ggggctcaacgcgctgacatgacg	259599	-	-	sugar porter
18004	SLC2A9	NM_020041.1	339	agagcagctgacatgacatgacg	2595206	-	-	sugar porter
18005	SLC35A2	NM_005660.1	867	ttgtcaagtaagctgacatgacg	259230	-	-	sugar porter
18006	SLC35A3	NM_017243.1	267	atgctgctgctgacatgacatgacg	259236	-	see also 5220 line	-
18007	SLC35C1	NM_018389.3	890	catcctgctgacatgacatgacg	259276	-	-	-
18008	SLC35D1	NM_015139.1	850	catcctgctgacatgacatgacg	259294	-	see also 6268 line	-
18009	SLC37A1	NM_018964.2	1352	cttcgagctgacatgacatgacg	259317	-	see also 7611 line	-
18010	SLC37A4	NM_001467.2	1461	cttcgagctgacatgacatgacg	259343	-	-	sugar porter
18011	SLC7A7	NM_003982.2	1620	atgctgctgacatgacatgacg	259380	-	-	basic amino acid transporter
18012	SLC7A2	NM_003046.1	558	tcgctgctgacatgacatgacg	259372	-	-	basic amino acid transporter
18013	SLC7A3	NM_032803.3	923	ttgttctgacatgacatgacg	259418	-	-	-
18014	SLC7A5	NM_003488.4	1495	catgctgctgctgacatgacg	259451	-	-	neutral amino acid transporter
18015	SLC7A6	NM_012244.2	1467	ctgagctgctgacatgacatgacg	259462	-	see also 5221 line	-
18016	FLJ10815	NM_018231.1	1054	actgacatgctgacatgacatgacg	259478	-	-	-
18017	FLJ39822	NM_173512.1	850	ttgtcctgctgacatgacatgacg	259494	-	-	-
18018	FLJ39709	NM_173514.1	783	ttgtcctgctgacatgacatgacg	259574	-	see also 10078 line	-
18019	MGCL5523	NM_138570.1	1281	atcctcctgctgacatgacatgacg	259582	-	-	-
18020	SLC12A8	NM_024626.3	1269	atcctcctgctgacatgacatgacg	259606	-	-	-
18021	SLC36A1	NM_078483.1	308	catcctgctgacatgacatgacg	259623	-	see also 9509 line	-
18022	SLC36A4	NM_152313.2	136	ttgtcctgctgacatgacatgacg	259647	-	see also 9840 line	-
18023	SLC36A3	NM_006841.3	1363	ttgtcctgctgacatgacatgacg	259712	-	-	-
18024	SLC36A4	NM_018016.2	1355	ggagcctgctgacatgacatgacg	259749	-	see also 7212 line	-
18025	SLC36A5	NM_033516.1	962	atgagctgctgacatgacatgacg	259777	-	-	-
18026	SLC7A10	NM_011984.9	1443	ctgctgctgacatgacatgacg	259788	-	-	-
18027	SLC7A13	NM_138817.1	1248	catgagcctgctgacatgacg	259834	-	-	-

glucose storage diseases (グリコーゲン蓄積症)
 lysine protein intolerance (リジン原性タンパク
 不耐症)

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18028	SLC7A4	NM_004173.1	440	atcttctctcaatacatctc	259852	-	-	basic amino acid transporter	-
18029	SLC7A6	NM_003983.1	591	carbaccatctatctctgag	259864	-	see also 2721 line	-	-
18030	SLC7A9	NM_014270.1	814	cttcaagctctctcaatctgga	259884	-	-	cystine transporter	cytinuria(システイン尿症)
18031	VAAT	NM_005552.2	496	ccctctctctctctctctctct	259920	-	-	-	-
18032	SLC17A4	NM_005495.1	786	agctatgctctctctctctctct	259950	-	-	symporter	-
18033	SLC17A7	NM_002309.1	1422	tgctgctgctctctctctctct	259972	-	-	-	-
18034	SLC3A2	NM_006424.1	1395	tgctatgctgctctctctctct	260001	-	see also 9499 line	-	-
18035	ANKH	NM_004027.3	1073	ggatctgctgctctctctctct	260032	-	-	-	-
18036	SLC29A11	NM_173826.1	1520	caggctgctgctctctctctct	260050	-	-	-	-
18037	SLC29A2	NM_000112.1	1015	aagctgctgctctctctctct	260077	-	see also 95 line	-	-
18038	SLC29A4	NM_000441.1	2382	tgctgctgctctctctctctct	260180	-	see also 349 line	-	-
18039	SLC29A6	NM_002911.2	1578	tgctgctgctctctctctctct	260200	-	-	-	-
18040	SLC29A8	NM_005832.2	2083	aagctgctgctctctctctct	260247	-	see also 9433 line	-	-
18041	SLC26A8	NM_052961.2	170	atcttaagctgctgctctctct	260259	-	-	-	-
18042	SLC22A11	NM_018484.2	547	ctctgctgctctctctctctct	260375	-	-	-	-
18043	SLC22A7	NM_006672.2	445	ggatctgctgctctctctctct	260384	-	-	sodium ⁺ independent organic anion carrier	-
18044	SLC01B1	NM_006446.2	1954	gtgtctctctctctctctctct	260422	-	-	-	-
18045	AFM	NM_001133.2	1414	cttctgctctctctctctctct	260479	-	-	-	-
18046	ECM1	NM_004425.2	1519	gtgtgtctctctctctctctct	260508	-	see also 2858 line	-	-
18047	LOC90139	NM_130783.1	272	ggctctctctctctctctctct	260512	-	-	-	-
18048	KCNJ3	NM_002239.2	536	aagctctctctctctctctct	260524	-	see also 1434 line	-	-
18049	KCNJ6	NM_002240.2	1355	tgctgctctctctctctctct	260581	-	channel, gper	G-protein activated inward rectifier potassium channel	diabetes mellitus(糖尿病), diabetes(糖尿病)
18050	KCNJ5	NM_000890.3	794	gtgtctctctctctctctctct	260589	-	see also 581 line	-	-
18051	KCNJ12	NM_021012.2	516	gtgtctctctctctctctctct	260598	-	-	inward rectifier potassium channel	-
18052	KCNJ13	NM_002242.2	861	actgtctctctctctctctctct	260621	-	channel	inward rectifier potassium channel	-
18053	KCNJ14	NM_013348.2	1185	tgctgctctctctctctctctct	260633	-	channel	channel	-
18054	KCNJ15	NM_002243.3	750	tgctgctctctctctctctctct	260642	-	channel	channel	-
18055	KCNJ16	NM_018658.1	1591	ggatctgctgctctctctctct	260688	-	channel	channel	-
18056	KCNJ2	NM_000891.2	1148	catgtgctgctgctctctctct	260706	-	channel	inward rectifier potassium channel	-
18057	KCNJ4	NM_004981.1	259	ctgtgctctctctctctctctct	260724	-	channel	-	-
18058	KCNJ8	NM_004982.2	464	ctctctctctctctctctctct	260730	-	channel	ATP-activated inward rectifier potassium channel	-
18059	KCNJ9	NM_004983.2	964	tgctctctctctctctctctct	260753	-	channel, gper	G-protein activated inward rectifier potassium channel	-

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18060	KCNK1	NM_002245.2	1044	gaggtctgagtgacactcaba	260786	-	channel	inward rectifier potassium channel	-
18061	KCNK6	NM_004823.1	930	cagtgacctgcagtttcacgc	260783	-	channel	inward rectifier potassium channel	-
18062	KCNK5	NM_019842.2	628	cggttgctgttcgatcgtaga	260788	-	channel	inward rectifier potassium channel	-
18063	KONE1	NM_000219.1	38	cagcagtgagccttcttcgaac	260835	-	channel	potassium channel regulator	Jervell and Lange-Nielsen syndrome(ジャ-ルランゲ ニールゼン症候群), long QT syndrome(QT延長症候群)
18064	KCNQ1	NM_000218.2	1878	ccgcctgaaccggtatagaaca	260849	-	channel	outward rectifier potassium channel	-
18065	KCNK2	NM_014217.1	747	gtgtgtatacctctaaacactct	260893	-	channel	channel	-
18066	KCNAB1	NM_003471.2	1047	tggctgttgccgaatgacatcag	260927	-	channel	channel	-
18067	KCNAB2	NM_003636.2	414	atggcatcaacctctctcgataga	260944	-	channel	channel	-
18068	KCNAB3	NM_004732.2	497	cagaaacccgagcggagtttaagc	260959	-	channel	voltage-gated potassium channel	-
18069	KONE2	NM_172201.1	429	aagacgcaaaactctgaactcaga	260976	-	channel	voltage-gated potassium channel	-
18070	KONE3	NM_005472.2	450	aagctaatgaccctctatctatg	260985	-	channel	potassium channel	long QT syndrome(QT延長症候群)
18071	KONG3	NM_133329.4	1299	gctggatcactgtaggtttctattgt	261000	-	see also 8564 line	channel, signal transduction	-
18072	KCNH6	NM_030779.2	1248	ctgagccctactctgctgctatgg	261030	-	transcription regulat	-	-
18073	KCNQ2	NM_172106.1	942	gggggagagcaaccactttgaca	261043	-	channel	channel	benign familial neonatal convulsions(-), epilepsy(てんかん)
18074	KCNQ2	NM_004518.2	1820	tgacatactctccggaattaaag	261047	-	channel	channel	benign familial neonatal convulsions(-), epilepsy(てんかん)
18075	KCNQ4	NM_004700.2	1775	cagcgcagatggcactcaaaagac	261106	-	channel	channel	deafness(聾)
18076	KCNV2	NM_133497.2	715	ctgggactctggcctcaagataga	261113	-	channel	channel	-
18077	KCNMB1	NM_004137.2	764	aagctcagagcccaactctccaaga	261119	-	channel	potassium channel regulator	-
18078	KCNMB2	NM_005832.3	562	atgctctctcaaggaacattt	261125	-	channel	channel	-
18079	KCNMB3	NM_014807.3	735	tgctcgaagcaaacactctcaaa	261148	-	channel	channel	-
18080	KCNMB4	NM_014505.4	536	gcctgtctgctctctctctctct	261167	-	channel	channel	-
18081	HCN1	NM_012072.1	821	tgcatttttgcactctctcaag	261187	-	see also 8077 line	channel	-
18082	KCNK10	NM_021161.3	2029	ggagccagagcaaacactcatta	261265	-	see also 8114 line	channel	-
18083	KCNK12	NM_022056.1	867	gctcattttctgctctctcaag	261271	-	channel	channel	-
18084	KCNK13	NM_022054.2	1177	cagcagaagccactctatgaga	261275	-	see also 8253 line	channel	-
18085	KCNK17	NM_031460.2	714	gctcctctctgctctgctgagaga	261297	-	channel	channel	-
18086	KCNK4	NM_011861.2	673	gctcctctctgctctgctgagaga	261303	-	channel	channel	-
18087	KCNK5	NM_003740.2	863	tggatgctccactctctgatttc	261318	-	see also 2553 line	channel	-

18088	ICGNK7	NM_005714.1	896	cagccgcaccccgcttacc	261324	-	channel	-	-
18089	ICGNK9	NM_018601.2	726	tgcccttgatgattatatac	261331	-	channel	voltage-gated ion channel	-
18090	ICGN42D	NM_000722.1	119	tgccgcctccatcaatcatg	261338	-	see also 471 line	-	-
18091	ICGN61	NM_000727.2	482	gcgaccgcgcgcgcgcgcgc	261486	-	channel	dihydropyridine-sensitive calcium channel	-
18092	ICGNB1	NM_000723.3	1923	ctggagagcggcgcctccttc	261482	-	channel	voltage-gated calcium channel	-
18093	ICGNB2	NM_000724.1	808	tggtgatgagcgggttgataa	261492	-	see also 475 line	-	-
18094	ICGNB4	NM_000726.1	1417	ttaaagcgaagctctattgccc	261558	-	channel	voltage-gated calcium channel	idiopathic generalized epilepsy(特発性全痙攣期), myoclonic epilepsy(ミオクローヌスめまい)
18095	ICGN23	NM_008078.2	865	gtctggctggccacatgtttat	261566	-	see also 4221 line	-	-
18096	ICGN63	NM_006539.2	1780	gtcttgctgcacatctat	261592	-	see also 4572 line	-	-
18097	ICGN64	NM_014405.2	252	ctgcttcgcgcatcaatccttc	261601	-	see also 5663 line	-	-
18098	ICGN65	NM_014404.1	208	ggcctcttgcctcactatgata	261607	-	channel	-	-
18099	ICGN67	NM_031896.3	758	gcagcgtctcctccaatgacg	261634	-	see also 9048 line	-	-
18100	ICGN68	NM_031895.4	396	gcagcgtctcctccgaagcaat	261637	-	see also 9047 line	-	-
18101	TRPC3	NM_003306.1	1325	aggccaaagctcttaagtctg	261729	-	see also 2243 line	-	-
18102	TRPC5	NM_012471.1	2994	aagcccaagcttgaaagtctca	261810	-	see also 5345 line	-	-
18103	TRPC6	NM_004671.3	653	gggaaagtgatcaatctcag	261830	-	see also 3141 line	-	-
18104	TRPM1	NM_002420.3	1823	gagctcaagcgtcaatccttc	261923	-	channel	-	-
18105	TRPM3	NM_020952.1	274	aagatcatccatcagctatctc	261981	-	see also 8048 line	-	melanoma(メラノーマ)
18106	SCN11A	NM_014139.1	2879	caagagagcttgctactaac	262160	-	see also 5511 line	-	-
18107	SCN11B	NM_001037.2	329	agagatctctatctctacccc	262229	-	see also 639 line	-	-
18108	SCN2B	NM_004588.2	362	cgcctcgaagatcaatccctga	262241	-	channel	voltage-gated sodium channel	-
18109	SCN3B	NM_018400.2	996	agcccccggggcgggttaagctt	262246	-	see also 7447 line	-	-
18110	SCN5A	NM_000335.3	737	ctgcgcgcgcgcttcacttcc	262280	-	channel	-	sick sinus syndrome(洞房結不全症候群), heart block(房室ブロック), long QT syndrome(QT延長症候群), Brugada syndrome(ブルガダ症候群), cardiac conduction defect(心腔興奮伝導障害)
18111	SCN7A	NM_002976.1	3834	caatcaactccctccatcaaacag	262391	-	channel	voltage-gated sodium channel	-
18112	ACON2	NM_001095.2	1788	gcagcactctggagccttacc	262450	-	channel	-	-
18113	ACON3	NM_004769.1	1011	cgcctccgcagcttgctccatgc	262455	-	channel	-	-
18114	APXL	NM_001649.2	993	ctgtatgttccctcgataagaag	262467	-	see also 1092 line	-	-
18115	SCN11B	NM_000336.1	1602	ttctcaagctcacaatctacttc	262508	-	channel	amiloride-sensitive sodium channel	pseudohypodosteronism(假性アルドステロン症), pseudohypodosteronism(假性アルドステロン症)
18116	SCN11D	NM_002978.2	860	ctgtgaccactctcaactctgg	262511	-	channel	amiloride-sensitive sodium channel	-
18117	SCN11G	NM_001039.1	684	gtctctatgagctcaacatctga	262524	-	channel	amiloride-sensitive sodium channel	pseudohypodosteronism(假性アルドステロン症), pseudohypodosteronism(假性アルドステロン症)
18118	ACGN4	NM_018674.3	1773	ggatctgcgctcaactatctga	262547	-	see also 7548 line	-	-

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18119	ACGN5	NM.017419.1	327	ccctcccttgcattgcattgc	262558	-	channel	-
18120	CATSPER	NM.050504.2	903	ccctcccttgcattgcattgc	262559	-	see also 9488 line	-
18121	CATSPER	NM.050202	402	ccctcccttgcattgcattgc	262619	-	see also 9497 line	-
18122	CATSPER	NM.178019.1	87	ccctcccttgcattgcattgc	262634	-	channel	-
18123	MCOLN3	NM.018298.3	1186	ccctcccttgcattgcattgc	262700	-	channel	-
18124	MGC13619	NM.032365.1	1304	ccctcccttgcattgcattgc	262727	-	channel	-
18125	NOLAI	NM.018983.2	950	ccctcccttgcattgcattgc	262735	-	channel	-
18126	TPCN1	NM.017901.3	1411	ccctcccttgcattgcattgc	262745	-	channel	-
18127	TPCN2	NM.139075.1	1520	ccctcccttgcattgcattgc	262774	-	channel	-
18128	TRPM4	NM.017836.2	129	ccctcccttgcattgcattgc	262793	-	receptor activity,	-
18129	TRPM5	NM.014555.2	2216	ccctcccttgcattgcattgc	262817	-	channel	-
18130	VRGML1	NM.052867.1	3468	ccctcccttgcattgcattgc	262956	-	channel	-
18131	GLCA1	NM.001285.1	1511	ccctcccttgcattgcattgc	263015	-	channel	-
18132	GLCA2	NM.006536.3	1212	ccctcccttgcattgcattgc	263079	-	see also 4569 line	-
18133	GLCA4	NM.017128.2	994	ccctcccttgcattgcattgc	263157	-	channel	-
18134	GLGN1	NM.000083.1	2755	ccctcccttgcattgcattgc	263238	-	see also 55 line	-
18135	GLGN2	NM.004366.2	2481	ccctcccttgcattgcattgc	263262	-	see also 2927 line	-
18136	GLGN4	NM.001830.2	894	ccctcccttgcattgcattgc	263333	-	see also 1188 line	-
18137	GLGN6	NM.001286.1	178	ccctcccttgcattgcattgc	263414	-	see also 847 line	-
18138	GLCN6	NM.021736.1	967	ccctcccttgcattgcattgc	263444	-	channel,	-
18139	GLCN7	NM.001287.3	1992	ccctcccttgcattgcattgc	263483	-	signal transduction	-
18140	CLCNKA	NM.004070.2	1896	ccctcccttgcattgcattgc	263486	-	channel	-
18141	CLIC2	NM.001289.3	762	ccctcccttgcattgcattgc	263496	-	channel	-
18142	CLIC4	NM.013943.1	910	ccctcccttgcattgcattgc	263513	-	channel	-
18143	CLIC5	NM.016829.1	431	ccctcccttgcattgcattgc	263517	-	channel	-
18144	CLIC6	NM.003277.1	2077	ccctcccttgcattgcattgc	263550	-	see also 9489 line	-
18145	CLIC2	NM.180990.2	298	ccctcccttgcattgcattgc	263552	-	channel	-
18146	FXD1	NM.005031.3	176	ccctcccttgcattgcattgc	263565	-	channel	-
18147	FLJ12770	NM.032174.3	825	ccctcccttgcattgcattgc	263579	-	receptor activity,	-
18148	VDAC1	NM.003374.1	295	ccctcccttgcattgcattgc	263589	-	channel	-
18149	VDAC3	NM.005662.3	230	ccctcccttgcattgcattgc	263591	-	channel	-
18150	AQP7	NM.001170.1	453	ccctcccttgcattgcattgc	263611	-	channel	-
						-	water channel	-

voltage-dependent anion channel deficiency (電圧駆動性陰イオンチャンネル欠損症)

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18151	FXD6	NM_022003.1	218	ttggctctctctctctctctct	263613	ion channel	-
18152	FXD7	NM_022006.1	257	ctggagcccccaccccgacacac	263616	ion channel	-
18153	MLG1	NM_015166.2	1294	gaatcctccctggtggaacatgc	263638	see also 0260 line	-
18154	TMASFI1	NM_015993.1	133	ccgactccctccggaactgc	263639	ion channel	-
18155	CX36	NM_020660.1	634	ccgactccctccggaactgc	263639	-	-
18156	CX40.1	NM_033608.1	330	ccgactccctccggaactgc	263640	-	-
18157	CX40.2	NM_033608.1	330	ccgactccctccggaactgc	263640	-	-
18158	CX40.3	NM_033608.1	330	ccgactccctccggaactgc	263640	-	-
18159	GJA1	NM_000165.2	607	agctcgaactccggaactgc	263714	ion transporter	visceroatrial heterotaxia (内臓錯位症)
18160	GJA12	NM_002435.1	165	agctcgaactccggaactgc	263735	-	-
18161	GJA5	NM_005268.4	1058	agctcgaactccggaactgc	263746	-	-
18162	GJB1	NM_000166.2	158	gttgcgttcaacccgactctact	263747	see also 136 line	-
18163	GJB2	NM_000166.2	335	gttgcgttcaacccgactctact	263748	connexon channel	deafness (聾)
18164	GJB4	NM_05212.1	857	gttgcgttcaacccgactctact	263803	connexon channel	erythrokeratoderma variabilis (変異性紅斑角皮)
18165	GJB1	NM_01538.1	254	ctctacccgagccctctactgc	263811	connexon channel	-
18166	AGP4	NM_001650.3	599	ctctacccgagccctctactgc	263824	see also 1083 line	-
18167	AGP5	NM_001651.1	1218	ggtcctctgagccatccaaag	263845	water channel	-
18168	AGP6	NM_001652.2	381	gttgcgttcaacccgactctact	263846	water channel	-
18169	AGP8	NM_00169.1	803	ttttgcgttcaacccgactctact	263859	water channel	-
18170	AGP9	NM_020980.2	377	tttgcgttcaacccgactctact	263882	urea transporter	urea transport defect (尿素輸送障害症), diabetes (糖尿病)
18171	SLC14A1	NM_015865.1	772	ctctacccgagccctctactgc	263887	urea transporter	-
18172	AGP1	NM_000385.3	821	gttgcgttcaacccgactctact	263908	transporter	-
18173	AGP10	NM_080429.2	223	gttgcgttcaacccgactctact	263909	-	-
18174	FL20130	NM_01681.1	445	gttgcgttcaacccgactctact	263930	-	-
18175	LOC12840	NM_138285.2	721	gttgcgttcaacccgactctact	263958	-	-
18176	NU214	NM_005085.2	1198	gttgcgttcaacccgactctact	264002	-	leukemia (白血病)
18177	NUF50	NM_007172.2	1256	gttgcgttcaacccgactctact	264030	-	-
18178	NUF54	NM_007172.2	1256	gttgcgttcaacccgactctact	264101	-	-
18179	PONT1	NM_020844.2	1494	gttgcgttcaacccgactctact	264189	-	-
18180	SNPR	NM_144642.3	509	gttgcgttcaacccgactctact	264205	-	-
18181	NAL	NM_002371.2	484	gttgcgttcaacccgactctact	264222	signal transduction	leukemia (白血病)
18182	STEAP	NM_012446.2	992	gttgcgttcaacccgactctact	264226	channel/pore class transporter	Ewing's sarcoma (ユーンガ肉腫)
18183	ATP6V0A2	NM_012463.1	187	gttgcgttcaacccgactctact	264237	hydrogen-transporting two-sector ATPase	-
18184	C10orf26	NM_017871.2	885	gttgcgttcaacccgactctact	264321	-	-
18185	C10orf4	NM_02496.2	3230	gttgcgttcaacccgactctact	264310	-	-
18186	C10orf52	NM_145165.1	389	gttgcgttcaacccgactctact	264328	transcription regulator	-
18187	C5orf12	NM_178278.2	728	gttgcgttcaacccgactctact	264338	or	-
18188	CYC1	NM_001918.2	335	gttgcgttcaacccgactctact	264400	electron	-
18189	DEGS	NM_003676.2	120	gttgcgttcaacccgactctact	264408	-	-

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18190	DISP1	NM_032890.2	4362	gttttgcaccaccgagataaac	264553	-	see also 9337 line	-	-
18191	DKFZ434	NM_032939.1	965	gcgaagacctctgttaacctga	264595	-	-	-	-
18192	DKFZ564	NM_032125.1	444	cagcccaacatgatatgtctga	264593	-	see also 9078 line	-	-
18193	EHZF	NM_015461.1	316	tgatctctctgtgtgatactca	264590	-	see also 6424 line	-	-
18194	ERJ5	NM_018981.1	2635	caggctctatccactgtttaatt	264753	-	see also 7636 line	-	-
18195	E1FA	NM_000126.1	58	cajgataacctctgtatatactga	264763	-	see also 99 line	-	-
18196	FBLP-1	NM_017556.1	951	cgcgcgagacacctgttgagabag	264785	-	-	-	-
18197	FLJ10900	NM_018264.1	2073	atctgaacacacacactaatt	264794	-	-	-	-
18198	FLJ12519	NM_032168.1	95	ttggcgcagcagtgtaacctt	264797	-	-	-	-
18199	FLJ14627	NM_032814.1	1268	ggcgtctctatctgtctctca	264874	-	-	-	-
18200	FLJ14768	NM_032836.1	763	cgcctctgacccgcacctcaacg	264877	-	-	-	-
18201	FLJ20095	NM_017666.1	2230	tgatctgctgtataacactta	264937	-	-	-	-
18202	FLJ20511	NM_017953.1	401	ctcagctagatgattcttctc	264947	-	-	-	-
18203	FLJ22625	NM_024715.2	1726	gagatattctgtgtctacttcc	264976	-	-	-	-
18204	FLJ23537	NM_024889.2	443	ctttttgcaattctatatta	264988	-	-	-	-
18205	FLJ25369	NM_152670.1	630	tatcaaggtccacctctaac	265003	-	-	-	-
18206	FLJ31384	NM_152471.1	1138	tgatgaagctacacactcga	265009	-	-	-	-
18207	FLJ40417	NM_173650.1	593	cagttatctctccgacaagatcc	265016	-	-	-	-
18208	GLRX	NM_002064.1	255	aagcagatgcagctctatctct	265033	-	-	-	-
18209	GLRX2	NM_016066.3	854	cagatcaacaacaacattctga	265038	-	-	-	-
18210	HCA127	NM_018684.1	214	aagcactctgagagatacagc	265043	-	-	-	-
18211	HECA	NM_018217.1	1545	aagccctctgagacatgtgaga	265060	-	-	-	-
18212	KIA04928	NM_014802.1	949	aagcctctctctgtgataatt	265093	-	-	-	-
18213	KIA1441	NM_020892.1	3123	agcgcacatcagcagtaactca	265189	-	see also 5998 line	-	-
18214	KIA1573	NM_020925.1	3443	aattctccactctgttgactctg	265247	-	see also 7985 line	-	-
18215	LOC15248	NM_178835.2	453	tttgatgtccctctgaagcttgg	265264	-	see also 8033 line	-	-
18216	LOC20447	NM_174924.1	1201	cgggttcaacagctctgatctcc	265320	-	-	-	-
18217	LOC51061	NM_015914.2	766	tgatctctgggtctcttggcttc	265353	-	see also 6568 line	-	-
18218	LOC51066	NM_015931.1	722	tttggcttggagctcacaatctgc	265392	-	-	-	-
18219	LOC51257	NM_016496.3	869	ttctctgcaactctgtttttccc	265400	-	-	-	-
18220	LOC90637	NM_182491.1	653	gggattctcccccacatcaaacg	265409	-	-	-	-
18221	MB	NM_005368.1	288	tgatttgactctctcaagaagaag	265413	-	-	-	-
18222	MGC14353	NM_032731.2	351	catctctcaactcaactgaattat	265424	-	-	-	-
18223	MGC15492	NM_032875.1	1358	tacacctgaacatgataactct	265463	-	-	-	-
18224	MGC33414	NM_173574.1	1184	cagaagagctctcaactcaactcc	265473	-	-	-	-
18225	MGC34648	NM_152660.1	382	aagatctgaacacactctcttgc	265479	-	see also 9910 line	-	-
18226	MGC44332	NM_178450.2	803	ctgagagcctctggactcttctgc	265496	-	see also 10189 line	-	-
18227	N33	NM_006765.2	1216	aattctccgcgcctctcttcttgg	265527	-	see also 4771 line	-	-

redox-active
disulfide bond
electron carrier

apoptosis,
transcription_regulat
or,

cell_cycle

see also 5998 line

see also 7985 line

see also 8033 line

see also 6568 line

see also 9910 line

see also 10189 line

see also 4771 line

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[illegible]

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18262	RHGS	NM_016321.1	343	cagcgtgtgtcgaacttttca	-	-	-	-	-
18263	SLC22A1	NM_003577.2	804	agagcaagcgtgcgttcagcc	-	-	-	-	-
18264	SLC22A13	NM_004286.1	868	aggtgcgtgcgtgcgtacaact	-	-	-	-	-
18265	SLC22A14	NM_004803.2	1106	accgcgaagtgtgcacaagaag	-	-	-	-	-
18266	SLC22A2	NM_003658.2	1821	tgtctaccgctgtctctacaatc	-	-	-	-	-
18267	SLC22A3	NM_021977.2	1152	agggcgcacactctctatagctt	-	-	-	-	see also 8237 line
18268	BAT108L7.2	NM_030971.2	1011	cagcgtttgaagctgtctctaca	-	-	-	-	-
18269	OKFZP434	-	-	-	-	-	-	-	-
18269	K0427	NM_032148.2	1729	aggaagagcaaccggtatgtctt	-	-	-	-	see also 9084 line
18270	DKFZp547	-	-	-	-	-	-	-	-
18270	M236	NM_018713.1	1205	ctcgtatgccacgcgcgaactct	-	-	-	-	-
18271	SFXN1	NM_022754.4	1008	ttagcgcgtgcgttactccaataa	-	-	-	-	cation transporter
18272	SFXN2	NM_178583.2	720	ctctgcgtactcgtctctccaatc	-	-	-	-	-
18273	SFXN4	NM_178677.2	409	tcggagcgcgtctgtctctccaac	-	-	-	-	-
18274	SLC30A1	NM_021194.1	1262	tctcgtatgcgtgcgtctcaataa	-	-	-	-	-
18275	SLC30A2	NM_032513.2	475	tcggagagatcgttcagctcttgc	-	-	-	-	see also 8132 line
18276	SLC30A5	NM_022902.2	289	actctaccagctctcgttccttaac	-	-	-	-	-
18277	SLC30A6	NM_017954.2	185	actctgcagctctctctcaabg	-	-	-	-	see also 8527 line
18278	SLC30A8	NM_173681.1	559	gcggcgcacactgcgtctactgt	-	-	-	-	-
18279	SLC41A1	NM_173854.3	1922	ctctctctcagcctcgttgaat	-	-	-	-	-
18280	MFS2L	NM_020662.1	611	gcagctgcgaataactgcataatc	-	-	-	-	-
18281	SLC39A11	NM_139177.2	171	gcagctctcgttcgttcataatc	-	-	-	-	-
18282	SLC39A12	NM_152725.1	1714	aaeyccatgaactcgtctacaatc	-	-	-	-	-
18283	SLC39A13	NM_152284.2	1108	ctgcgcgtgcgttcgttcgaatg	-	-	-	-	-
18284	SLC39A3	NM_144564.3	567	tttgcgcgtgcgttcgttcgaatg	-	-	-	-	-
18285	SLC39A4	NM_017767.1	736	tttgcgcgtgcgttcgttcgaatg	-	-	-	-	-
18286	SLC39A5	NM_173596.1	876	ttgcgcgtgcgttcgttcgaatg	-	-	-	-	-
18287	SLC39A6	NM_012319.2	2273	ttgcgcgtgcgttcgttcgaatg	-	-	-	-	-
18288	SLC39A7	NM_008979.1	815	ccgcgtgcgttcgttcgaatg	-	-	-	-	see also 4873 line
18289	SLC39A8	NM_022154.4	1378	ggagcagcttcgttcgttcgaatg	-	-	-	-	-
18290	SLC39A9	NM_018375.2	747	ctgcgttcgttcgttcgaatg	-	-	-	-	-
18291	SLC22A6	NM_004790.3	1634	ctctctactgcgttcgttcgaatg	-	-	-	-	-
18292	SLC22A8	NM_004254.2	839	tgcgttcgttcgttcgaatg	-	-	-	-	see also 3325 line
18293	SLC01A2	NM_005075.2	457	ctctcagcgttcgttcgaatg	-	-	-	-	-
18294	SLC01B3	NM_019844.1	107	aaagcgcgttcgttcgaatg	-	-	-	-	-
18294	DKFZp761	-	-	-	-	-	-	-	-
18295	H039	NM_018711.1	1637	ctcgtctgcgcgttcgaatg	-	-	-	-	-
18296	P1P2	NM_002668.1	157	ctctgttcgttcgttcgaatg	-	-	-	-	-
18297	SLC22A5	NM_003000.2	1476	ctgcgcgcgcgttcgaatg	-	-	-	-	ion transporter
18298	AP1B1	NM_001127.2	517	ctctcgttcgcgttcgaatg	-	-	-	-	ion transporter
18299	AP1G1	NM_001128.4	2703	atcgcgttcgcgttcgaatg	-	-	-	-	see also 715 line
18300	AP1G2	NM_003917.2	1287	caftgcgcgcgcgttcgaatg	-	-	-	-	see also 719 line
18301	AP1M1	NM_032493.2	585	gcgttcgcgcgcgttcgaatg	-	-	-	-	-
18302	AP1M2	NM_005468.3	1100	actctgcgttcgttcgaatg	-	-	-	-	protein transporter
18303	AP1M3	NM_005468.3	1100	actctgcgttcgttcgaatg	-	-	-	-	-

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18303	API51	NM_001283.3	30	atagctgctgctgctcttttt	267532	-	-	-	-
18304	API51	NM_173814.2	325	gagctctgctgctgctgctgct	267544	-	-	-	-
18305	API53	NM_017402.2	1394	ctgctgctgctgctgctgctgct	267554	-	-	see also 5535 line	-
18306	AP361	NM_003664.3	1143	ctgctgctgctgctgctgctgct	267556	-	-	see also 2480 line	-
18307	AP362	NM_004644.3	1568	gagctgctgctgctgctgctgct	267695	-	-	-	protein transporter
18308	AP362	NM_003938.4	2373	ctgctgctgctgctgctgctgct	267702	-	-	see also 2895 line	-
18309	AP3M1	NM_017095.2	570	gctgctgctgctgctgctgctgct	267768	-	-	-	protein transporter
18310	AP3M2	NM_008080.2	159	ctgctgctgctgctgctgctgct	267784	-	-	see also 4783 line	-
18311	AP3S1	NM_001284.1	491	gagctgctgctgctgctgctgct	267839	-	-	signal transduction	-
18312	AP3S2	NM_005829.3	533	gagctgctgctgctgctgctgct	267856	-	-	-	-
18313	APBA1	NM_001163.2	2574	tgagctgctgctgctgctgctgct	267880	-	-	see also 742 line	-
18314	ARCN1	NM_001655.3	1222	ctgctgctgctgctgctgctgct	267908	-	-	-	-
18315	BCAP29	NM_018844.1	407	ctgctgctgctgctgctgctgct	267922	-	-	see also 7600 line	-
18316	BCAP31	NM_005745.5	335	gtctgctgctgctgctgctgctgct	267932	-	-	see also 3995 line	-
18317	C1orf163	NM_018106.2	1151	ctctgctgctgctgctgctgctgct	267976	-	-	-	-
18318	C2orf161	NM_033421.2	596	tctgctgctgctgctgctgctgct	268008	-	-	-	-
18319	CHST1	NM_000068.1	8421	tgagctgctgctgctgctgctgct	268252	-	-	see also 51 line	-
18320	COG1	NM_018714.1	1500	gtgctgctgctgctgctgctgctgct	268285	-	-	see also 7575 line	-
18321	COG2	NM_007357.1	753	gagctgctgctgctgctgctgctgct	268425	-	-	-	protein transporter
18322	COG3	NM_031431.2	1557	ctgctgctgctgctgctgctgctgct	268513	-	-	see also 9018 line	-
18323	COG4	NM_015368.1	2163	ctgctgctgctgctgctgctgctgct	268533	-	-	see also 6403 line	-
18324	COG5	NM_005348.2	1807	ctgctgctgctgctgctgctgctgct	268648	-	-	-	-
18325	COG7	NM_155660.1	931	gagctgctgctgctgctgctgctgct	268779	-	-	-	-
18326	COG8	NM_032382.2	1459	atgctgctgctgctgctgctgctgct	268813	-	-	-	-
18327	COPB	NM_015451.3	3083	atgctgctgctgctgctgctgctgct	268902	-	-	see also 6862 line	-
18328	COPE	NM_007263.3	132	gagctgctgctgctgctgctgctgct	268910	-	-	protein transporter	-
18329	COPG	NM_018728.3	717	atgctgctgctgctgctgctgctgct	268950	-	-	protein transporter	-
18330	COPG2	NM_017133.1	1190	atgctgctgctgctgctgctgctgct	268958	-	-	-	-
18331	COP21	NM_010057.1	462	tgctgctgctgctgctgctgctgct	268989	-	-	protein transporter	-
18332	COP22	NM_010429.1	352	ggctgctgctgctgctgctgctgct	268904	-	-	protein transporter	-
18333	E1F4ENF1	NM_019843.2	1181	gagctgctgctgctgctgctgctgct	269000	-	-	see also 7733 line	-
18334	EPIM	NM_001980.2	493	ctgctgctgctgctgctgctgctgct	269075	-	-	signal transduction	-
18335	EXOT0	NM_015219.1	1383	ctgctgctgctgctgctgctgctgct	269110	-	-	-	-
18336	GGA1	NM_013365.2	43	ctgctgctgctgctgctgctgctgct	269121	-	-	-	-
18337	GOSR2	NM_004287.2	406	tgagctgctgctgctgctgctgctgct	269138	-	-	-	-
18338	IP011	NM_016338.3	1096	ggctgctgctgctgctgctgctgct	269166	-	-	see also 6816 line	-
18339	IP013	NM_014652.1	1682	ctgctgctgctgctgctgctgctgct	269238	-	-	see also 5824 line	-
18340	IP09	NM_018085.3	1759	ctgctgctgctgctgctgctgctgct	269284	-	-	-	-
18341	KPNA4	NM_002268.3	1595	tgctgctgctgctgctgctgctgct	269352	-	-	see also 1456 line	-
18342	KPNA5	NM_002269.2	207	tgagctgctgctgctgctgctgctgct	269352	-	-	protein transporter	-
18343	KPNA6	NM_012316.3	675	tgctgctgctgctgctgctgctgct	269415	-	-	see also 5272 line	-
18344	MTX1	NM_002455.2	632	ctgctgctgctgctgctgctgctgct	269435	-	-	protein transporter	-
18345	MTX2	NM_005554.1	435	atgctgctgctgctgctgctgctgct	269451	-	-	see also 4592 line	-
18346	NAPG	NM_003826.1	428	tgctgctgctgctgctgctgctgct	269453	-	-	lyase	-

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18347	NUo37	NM_024051.2	427	aggccatcacacgcttcatttaatt	269528	—	—	see also 0580 line
18348	NUJ98	NM_005387.3	1270	tggccataaagcagctctctctca	269560	—	—	see also 3753 line
18349	NUJF2	NM_005796.1	457	agctgcgcgcacacacatttgg	269663	—	—	protein transporter
18350	NXT2	NM_018698.3	389	tggtacaaagccacacttaatttgg	269700	—	—	protein transporter
18351	PEX13	NM_002618.1	624	catcgagatcttgatttaagaag	269731	—	—	see also 1696 line
18352	PIGR	NM_002644.2	2183	actcgcgcgcagcttcaatcaaga	269785	—	—	protein transporter
18353	SCAMP1	NM_004866.3	448	tcctctgggaagcagaaltgcaga	269803	—	—	—
18354	SCAMP2	NM_005697.3	752	tgtcaaatatggtatctacatca	269844	—	—	protein transporter
18355	SCAMP3	NM_005898.2	713	atggagatccccaacattatcca	269852	—	—	—
18356	SEC10L1	NM_006544.2	1146	aagtcgcgttcgaacacatactt	269880	—	—	—
18357	SEC13L1	NM_030673.2	890	agctctcgaacgaacttccttgg	269912	—	—	—
18358	SEC15L1	NM_019053.2	181	ttgtatcccttatcatgaagaag	269918	—	—	—
18359	SEC23A	NM_008364.2	2143	ttcatcttccatcacttcaatg	270035	—	—	see also 7677 line
18360	SEC23B	NM_008363.3	1901	ctgtatgaatctcatatcaatga	270091	—	—	see also 4461 line
18361	SEC24B	NM_008323.1	3434	acgctcagctgaatcctatgag	270221	—	—	see also 4458 line
18362	SEC24D	NM_014822.1	219	ttgtatcaacctcttatctcca	270236	—	—	protein transporter
18363	SEC3	NM_018261.2	2689	atgaattttatgcctatcttga	270363	—	—	protein transporter
18364	SEC6	NM_007271.3	1759	atccagagagacgctctatgag	270483	—	—	—
18365	SEC6B	NM_007214.3	927	gcagagagacgctctatgag	270484	—	—	see also 5021 line
18366	SNAG1	NM_052870.1	1823	tcagagagacgctctatgag	270516	—	—	protein transporter
18367	SNAP23	NM_003825.2	122	tcagagagacgctctatgag	270519	—	—	—
18368	SNAP29	NM_004782.2	892	tcagagagacgctctatgag	270536	—	—	receptor activity
18369	SNX1	NM_003099.2	1361	tcagagagacgctctatgag	270560	—	—	—
18370	SNX10	NM_013322.2	317	tcagagagacgctctatgag	270570	—	—	protein transporter
18371	SNX11	NM_013323.2	713	tcagagagacgctctatgag	270576	—	—	—
18372	SNX12	NM_013340.2	324	tcagagagacgctctatgag	270578	—	—	—
18373	SNX15	NM_013360.2	657	tcagagagacgctctatgag	270587	—	—	protein transporter
18374	SNX16	NM_022733.2	1020	tcagagagacgctctatgag	270591	—	—	—
18375	SNX19	NM_014758.1	1221	tcagagagacgctctatgag	270618	—	—	see also 8298 line
18376	SNX2	NM_003100.2	401	tcagagagacgctctatgag	270638	—	—	protein transporter
18377	SNX24	NM_014035.1	106	tcagagagacgctctatgag	270685	—	—	—
18378	SNX26	NM_052946.2	368	tcagagagacgctctatgag	270717	—	—	see also 2081 line
18379	SNX27	NM_030918.4	456	tcagagagacgctctatgag	270714	—	—	see also 5466 line
18380	SNX2	NM_003764.2	494	tcagagagacgctctatgag	270746	—	—	protein transporter
18381	SNX3	NM_014426.2	554	tcagagagacgctctatgag	270808	—	—	protein transporter
18382	SNX8	NM_013321.1	358	tcagagagacgctctatgag	270848	—	—	see also 5673 line
18383	STX10	NM_003765.1	348	tcagagagacgctctatgag	270856	—	—	protein transporter
18384	STX11	NM_003764.2	202	tcagagagacgctctatgag	270875	—	—	protein transporter
18385	STX12	NM_177424.1	689	tcagagagacgctctatgag	270877	—	—	receptor activity
18386	STX16	NM_003763.2	909	tcagagagacgctctatgag	270880	—	—	see also 10162 line
18387	STX18	NM_016300.2	930	tcagagagacgctctatgag	270907	—	—	—
18388	STX1A	NM_004803.1	710	tcagagagacgctctatgag	270931	—	—	—
18389	STX3A	NM_004177.3	638	tcagagagacgctctatgag	270936	—	—	protein transporter
18390	STX4A	NM_004804.3	858	tcagagagacgctctatgag	270948	—	—	see also 2804 line
18391	STX4A	NM_004804.3	858	tcagagagacgctctatgag	270970	—	—	protein transporter

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18391	STX5A	NM_003164.2	394	cttccgcacacccgactgaatc	270974	-	see also 2138 line	-
18392	STX7	NM_003569.1	428	gattttctctctgctgaatgac	270980	-	-	protein transporter
18393	STX6P1	NM_003165.1	271	agacacggagcgaatgaatgt	270988	-	-	-
18394	STX6P3	NM_007269.1	821	agaattctcgcacgctgactatg	271058	-	see also 5067 line	-
18395	SYBL1	NM_005539.3	867	agaagacctcgcacgctatcat	271113	-	see also 3505 line	-
18396	TLOC1	NM_003262.2	834	ctcagagatcgtctgactactg	271125	-	see also 2210 line	-
18397	TOM1	NM_005466.1	847	ctcagcgcgaagaggttgaaag	271145	-	-	-
18398	TOM1L1	NM_005466.1	678	ctcagcgtcgcgcacatgaa	271173	-	-	-
18399	VDP	NM_003716.1	1258	asagccgcgcgaatgagctactc	271258	-	see also 2538 line	-
18400	VPS18	NM_080432.1	884	cgcgcactatgactgaatgacg	271311	-	see also 9514 line	-
18401	VPS33A	NM_022591.2	1874	ggcctgaactctgctgaatgg	271372	-	-	-
18402	VPS39	NM_015289.1	2726	ggagctgctctcactaactct	271471	-	-	-
18403	VPS4A	NM_007259.2	501	ggatgcacgcgcacgctctaga	271488	-	see also 5062 line	-
18404	VTT1A	NM_145206.1	458	ggggcacatctcctcgataaca	271526	-	-	-
18405	XPO1	NM_003400.2	2466	asgttagggagacataacacgc	271562	-	see also 2294 line	-
18406	XPO4	NM_022459.3	2272	cgactgcttagagtgatataa	271721	-	see also 8382 line	-
18407	CTNS	NM_004937.1	699	carccgcattgacatcaaac	271784	-	see also 3433 line	-
18408	XK	NM_021083.2	536	ctaacctcagctacataaag	271797	-	see also 8082 line	-
18409	PITPNC1	NM_012417.2	1320	asgccaatctgcgccaactctga	271841	-	signal transduction	-
18410	APOA2	NM_001643.1	294	ctggaacaggactgttaacttc	271852	-	-	Hepatocyte nuclear factor 1
18411	APOC3	NM_000040.1	268	ggcacacctgaagcaagttct	271857	-	-	lipo-B p50 subunit
18412	APOC4	NM_001646.1	235	cgagacpctgtgcatatgtct	271859	-	-	-
18413	APOL1	NM_003661.2	1207	tgatcacctcctgcgcgataca	271879	-	-	Alzheimer disease (アルツハイマー病)
18414	APOL3	NM_014342.2	748	agaagactctgaagatatacgcg	271881	-	-	schizophrenia (精神分裂病)
18415	APOL6	NM_030841.2	1198	ggcctgctgagagcagctatctg	271905	-	kinase related	schizophrenia (精神分裂病)
18416	PHR-4	NM_006884.1	565	ggcctgctgagagcagctatctg	271918	-	-	schizophrenia (精神分裂病)
18417	SA4A	NM_006512.1	185	ggcctgctgagagcagctatctg	271923	-	-	-
18418	SLC02A1	NM_006530.1	1424	ctgctctgctgagagcagctatctg	271951	-	-	lipid transporter
18419	SLC18A1	NM_003053.1	828	gggaacactctctctctctg	271972	-	-	lipid transporter
18420	SLC18A2	NM_003054.1	1514	gggaacactctctctctctg	272008	-	see also 2047 line	-
18421	OTL1	NM_022109.2	1292	caataatgcctcctctctctg	272081	-	see also 2048 line	-
18422	SLC5A7	NM_021815.2	385	ggcctgctgagagcagctatctg	272074	-	see also 8271 line	-
18423	SLC35B1	NM_006827.1	594	ggcctgctgagagcagctatctg	272132	-	see also 8176 line	-
18424	SLC35A5	NM_017945.2	1103	ggcctgctgagagcagctatctg	272166	-	-	-
18425	SLC35B4	NM_032826.2	489	aggatctactctcactatctgga	272175	-	see also 9294 line	-
18426	NUP107	NM_020401.1	2340	agctactcggagacattctgac	272254	-	-	nucleocytoplasmic transporter
18427	NUP155	NM_004293.2	1666	ggcctactcggagacattctgac	272315	-	-	-
18428	UPF3A	NM_023011.2	870	aggatctactcggagacattctgac	272412	-	-	-
18429	UPF3B	NM_023010.2	234	ggcctactcggagacattctgac	272419	-	-	-

familial hypercholesterolemia (家族性高コレステロール血症) apolipoprotein A-I deficiency (アポ

18430	CHAC	NM_015186.1	6547	aagatgcttgaggattaccacac	272653	-	see also 6271 line
18431	KJAA1012	NM_014939.1	1753	tgcacacccagctgattgaa	272606	-	see also 6121 line
18432	VP5A1	NM_014398.2	573	ctgattcttggccaaataat	272895	-	see also 5661 line
18433	DEFA4	NM_001925.1	161	caaaaacacagacatactatt	272938	-	calcium channel regulator
18434	PLN	NM_002667.2	301	attctctctgctgctgataca	272945	-	calcium channel regulator
18435	CJN1A	NM_001263.1	746	gtgacaccacacaaacatgac	272953	-	phosphatase
18436	CYGB	NM_134268.3	514	tggacccggtgcttccagatc	272962	-	auxiliary transport protein
18437	HB	NM_000518.4	386	ctgtgtgtgccccctactttg	272964	-	globin
18438	HBET1	NM_005330.3	573	tggtaacgtgctgctgattat	272969	-	specific RNA polymerase II transcription factor
18439	HBQ1	NM_005331.3	264	cgcacacagacactactctcc	272971	-	zinc binding
18440	HBZ	NM_005332.2	68	aagactgagagacactattgt	272972	-	globin
18441	NG	NM_021257.2	574	aagtgatctctgtgtgtgac	272973	-	Smea3/Sp-1 heterodimer
18442	SORT1	NM_002959.3	1308	aagctgtctctcgaagataatt	273007	-	-
18443	TETRA1	NM_001120.2	483	atggtgtgcacactctatgac	273039	-	see also 1986 line
18444	SLC29A1	NM_004955.1	614	aagactgtgctcttaattcaat	273048	-	see also 3445 line
18445	SLC29A2	NM_001532.2	862	gaacctgctctcaacttgatgttg	273057	-	nucleoside transporter
18446	SLC33A1	NM_004733.2	770	atcgcctctatgtaagaacttc	273068	-	see also 3250 line
18447	AP2B1	NM_001282.1	618	ggatctctatcaactcaatc	273113	-	-
18448	AP2M1	NM_004068.2	618	gcggcgaagagatatacagtaab	273118	-	-
18449	AP2S1	NM_004068.2	189	cgcgcgcgcgcgcgcgcgcgcgc	273182	-	-
18450	AP4B1	NM_005594.1	588	ctgcgcgcgcgcgcgcgcgcgcgc	273180	-	see also 4625 line
18451	AP4M1	NM_004722.2	897	ctgcgcgcgcgcgcgcgcgcgcgc	273247	-	-
18452	AP4S1	NM_007071.2	457	caagcgcgcgcgcgcgcgcgcgcgc	273267	-	-
18453	AQP3	NM_004925.3	360	aggacgcgcgcgcgcgcgcgcgcgc	273280	-	transporter
18454	C15orf7	NM_004913.1	139	ctggatgctatcgaagataagc	273282	-	transcription regulator
18455	C20orf121	NM_024331.2	379	cgcgcgcgcgcgcgcgcgcgcgcgc	273289	-	or
18456	C20orf26	NM_015585.2	2000	aagatctcgctgctgattgcttt	273355	-	see also 8611 line
18457	C20orf59	NM_022089.2	1347	atctctagcgcgcgcgcgcgcgcgc	273408	-	-
18458	OLCA3	NM_004921.1	576	atctctcactgctgattgcttt	273428	-	-
18459	OPN7	NM_014427.3	439	ctgtccagagagcgcgcgcgcgcgc	273435	-	-
18460	EVER1	NM_007267.5	1841	gggaactgtgtttgaagattatc	273500	-	-
18461	FLJ14153	NM_022736.1	609	atgctgtttctgaagattgag	273523	-	see also 8442 line
18462	FLJ25217	NM_152351.2	1020	atctctgctctctgaagataac	273538	-	-
18463	FLJ40121	NM_175904.2	1203	ctgaagcgcgcgcgcgcgcgcgcgc	273573	-	-
18464	GASP	NM_014710.1	2037	gaactgtgtgtgattgatttatt	273619	-	-
18465	GOLGA3	NM_005995.2	689	caattctctcgcgcgcgcgcgcgcgc	273653	-	see also 4038 line

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18466	HUATL2	NM.032318.1	410	agtttactgtctacatgaac	273689	-	-	-	-
18467	JUB	NM.032870.4	1829	ttccagcggatgacactctga	273703	-	see also 9330 line	-	-
18468	LCN2	NM.005964.2	234	ttccagcggatgacactctga	273703	-	-	transporter	-
18469	LG3	NM.139278.1	1574	ttccagcggatgacactctga	273730	-	-	-	-
18470	LOG12728	NM.182752.2	363	ttccagcggatgacactctga	273738	-	-	-	-
18471	LOG13630	NM.174959.1	724	ttccagcggatgacactctga	273759	-	-	-	-
18472	LOG13830	NM.174959.1	536	ttccagcggatgacactctga	273759	-	-	-	-
18473	LOG14342	NM.157333.2	1171	ttccagcggatgacactctga	273784	-	-	-	-
18474	MGT1308	NM.032889.2	629	ttccagcggatgacactctga	273815	-	-	-	-
18475	MGT34646	NM.173519.1	811	ttccagcggatgacactctga	273884	-	-	-	-
18476	MGT34821	NM.173586.1	948	ttccagcggatgacactctga	273906	-	-	-	-
18477	MGT52019	NM.178499.2	941	ttccagcggatgacactctga	273936	-	-	-	-
18478	MGT9564	NM.080669.2	751	ttccagcggatgacactctga	273970	-	see also 9520 line	-	-
18479	MIP	NM.012064.1	720	ttccagcggatgacactctga	273970	-	see also 5103 line	-	-
18480	MTAC2D1	NM.152332.2	1058	ttccagcggatgacactctga	274002	-	-	-	-
18481	NOD3	NM.178844.1	1600	ttccagcggatgacactctga	274022	-	-	-	-
18482	NUP88	NM.002432.3	708	ttccagcggatgacactctga	274058	-	see also 1630 line	-	-
18483	ORM1	NM.000607.1	338	ttccagcggatgacactctga	274058	-	-	transporter	-
18484	PACSIN2	NM.007229.1	1369	ttccagcggatgacactctga	274101	-	-	-	-
18485	PDZK1	NM.002614.3	157	ttccagcggatgacactctga	274104	-	see also 1680 line	-	-
18486	PPP1R9B	NM.032595.1	1764	ttccagcggatgacactctga	274126	-	Phosphatase, cell cycle	-	-
18487	SLC12A5	NM.171550.2	1652	ttccagcggatgacactctga	274139	-	-	-	-
18488	SLC15A3	NM.016582.1	1839	ttccagcggatgacactctga	274155	-	-	-	-
18489	SLC17A6	NM.020346.1	1613	ttccagcggatgacactctga	274218	-	-	-	-
18490	SLC17A8	NM.193191.1	890	ttccagcggatgacactctga	274247	-	-	-	-
18491	SLC22A12	NM.145855.2	953	ttccagcggatgacactctga	274278	-	-	-	-
18492	SLC22A15	NM.018420.1	1570	ttccagcggatgacactctga	274312	-	-	-	-
18493	SLC22A16	NM.033125.2	1012	ttccagcggatgacactctga	274332	-	-	-	-
18494	SLC22A17	NM.018609.2	191	ttccagcggatgacactctga	274352	-	see also 6950 line	-	-
18495	SLC22A9	NM.080866.1	745	ttccagcggatgacactctga	274381	-	-	-	-
18496	SLC23A3	NM.144712.2	1008	ttccagcggatgacactctga	274380	-	-	-	-
18497	SLC37A3	NM.032295.1	1218	ttccagcggatgacactctga	274428	-	see also 9147 line	-	-
18498	SLC5A8	NM.145913.1	1559	ttccagcggatgacactctga	274462	-	see also 9804 line	-	-
18499	SLOC1C1	NM.017435.2	1189	ttccagcggatgacactctga	274508	-	-	-	-
18500	SLOC2B1	NM.007256.1	2173	ttccagcggatgacactctga	274558	-	-	transporter	-
18501	SLOC3A1	NM.013272.2	700	ttccagcggatgacactctga	274568	-	see also 5383 line	-	-
18502	SLOC4A1	NM.016354.3	979	ttccagcggatgacactctga	274599	-	-	-	-
18503	SLOC4C1	NM.180991.4	360	ttccagcggatgacactctga	274621	-	-	-	-
18504	SLOC5A1	NM.030958.1	2073	ttccagcggatgacactctga	274722	-	see also 8975 line	-	-
18505	SLC6A1	NM.173488.2	990	ttccagcggatgacactctga	274795	-	-	-	-
18506	SNRP	NM.000123.2	1915	ttccagcggatgacactctga	274876	-	see also 7758 line	-	-
18507	SPINL	NM.032038.1	489	ttccagcggatgacactctga	274881	-	-	-	-
18508	SV2A	NM.014849.1	1902	ttccagcggatgacactctga	274908	-	-	-	-

图 46 (续表)

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18509	SV2B	NM_014848.1	605	agaactctctagactgactatct	274925	-	-	-	-
18510	SVPL	NM_006754.2	483	ttctctccgcacgtctctctctg	274960	-	-	-	-
18511	SVT11	NM_152280.2	842	agaacttaagaagccctctctaa	274988	-	-	-	-
18512	SVT12	NM_170963.2	662	ttctctccgcacgtctctctctg	275002	-	-	-	see also 9827 line
18513	SVT13	NM_020826.1	913	ttctctccgcacgtctctctctg	275013	-	-	-	see also 10173 line
18514	SVT14	NM_152262.1	906	ttctctccgcacgtctctctctg	275013	-	-	-	see also 7384 line
18515	SVT14L	NM_152621.1	750	ttctctccgcacgtctctctctg	275068	-	-	-	see also 9880 line
18516	SVT2	NM_171402.3	1280	ttctctccgcacgtctctctctg	275117	-	-	-	-
18517	SVT3	NM_032328.1	803	ttctctccgcacgtctctctctg	275118	-	-	-	see also 9149 line
18518	SVT4	NM_020783.2	1255	ttctctccgcacgtctctctctg	275149	-	-	-	see also 7887 line
18519	SVT5	NM_004200.2	716	ttctctccgcacgtctctctctg	275156	-	-	-	see also 2811 line
18520	SVT14	NM_080371.1	435	ttctctccgcacgtctctctctg	275159	-	-	-	see also 9521 line
18521	TCOF1	NM_000356.1	2977	ttctctccgcacgtctctctctg	275206	-	-	-	transporter
18522	TM9SF1	NM_008405.3	131	ttctctccgcacgtctctctctg	275214	-	-	-	see also 4487 line
18523	TM9SF2	NM_004800.1	981	ttctctccgcacgtctctctctg	275277	-	-	-	see also 3332 line
18524	TM9SF4	NM_014742.1	369	ttctctccgcacgtctctctctg	275326	-	-	-	see also 5939 line
18525	CNO12	NM_014515.1	1536	ttctctccgcacgtctctctctg	275420	-	-	-	see also 5729 line
18526	GTF2B	NM_001514.2	580	ttctctccgcacgtctctctctg	275439	-	-	-	see also 1042 line
18527	GTF2E1	NM_005513.1	94	ttctctccgcacgtctctctctg	275452	-	-	-	general RNA polymerase II transcription factor
18528	GTF2E2	NM_002095.3	1051	ttctctccgcacgtctctctctg	275512	-	-	-	see also 1358 line
18529	TAFIC	NM_005679.2	1175	ttctctccgcacgtctctctctg	275525	-	-	-	transcription_regulat
18530	BLZF1	NM_033668.2	1051	ttctctccgcacgtctctctctg	275532	-	-	-	or
18531	GEF1	NM_007018.3	2184	ttctctccgcacgtctctctctg	275636	-	-	-	see also 2491 line
18532	EAP30	NM_007241.2	335	ttctctccgcacgtctctctctg	275737	-	-	-	transcription_regulat
18533	ELL2	NM_012081.3	1113	ttctctccgcacgtctctctctg	275768	-	-	-	transcription_regulat
18534	UTAF	NM_004862.1	399	ttctctccgcacgtctctctctg	275781	-	-	-	transcription factor
18535	SUPT3H	NM_003599.1	372	ttctctccgcacgtctctctctg	275804	-	-	-	transcription_regulat
18536	SURB7	NM_004264.2	340	ttctctccgcacgtctctctctg	275825	-	-	-	transcription_regulat
18537	BTf	NM_014739.1	417	ttctctccgcacgtctctctctg	275912	-	-	-	transcription_regulat
18538	NAB1	NM_005966.2	1089	ttctctccgcacgtctctctctg	276045	-	-	-	transcription_regulat
18539	REST	NM_005612.3	1004	ttctctccgcacgtctctctctg	276074	-	-	-	transcription_regulat
18540	ELL	NM_006532.1	438	ttctctccgcacgtctctctctg	276140	-	-	-	transcription_regulat

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図 46 (続き)

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18571	BICD1	NM_001714.1	2524	aaatcagcagcccaataaaga	27347	-	see also 1141 line	-
18572	BKGA6.2	NM_019601.2	1279	atctctcagcttctattctgc	27359	-	-	molecular_function unknown
18573	BM-002	NM_016617.1	259	ctcgagattattctcgagatgc	27374	-	-	molecular_function unknown
18574	BPESC1	NM_021812.1	615	caatccttggctgattcttgc	27375	-	-	molecular_function unknown
18575	BRD3	NM_007371.2	324	ctcgagcagcaatcaattgaac	27379	-	-	-
18576	BRMS1	NM_013399.2	748	ttgcctccatctcgtctctctgc	27398	-	-	cell_cycle
18577	BRP-4L	NM_010098.1	368	atcccaagcaacaataaagagag	27404	-	-	-
18578	BTN2A1	NM_007049.2	1080	agagatttgaacagaaacaaga	27409	-	-	-
18579	C11orf1	NM_027161.1	182	atggcagtcacccatcaatgaga	27413	-	see also 8456 line	-
18580	C11orf2	NM_013285.2	2078	aaactatctctgaactgattga	27428	-	-	-
18581	C11ORF4	NM_020155.2	1252	ttgcctctcgtctcactctctt	27431	-	-	-
18582	C11orf1	NM_007176.1	442	ggcttcggatctcagaagtga	27449	-	-	-
18583	C14orf123	NM_001469.2	1057	ttgcacagagatttgaatg	27464	-	see also 4982 line	-
18584	C15orf2	NM_018958.1	2884	gaaccaagtgcaggttcaaatgc	27501	-	-	-
18585	C16orf35	NM_012075.1	927	ggccttaatttcgcttcacatca	27521	-	-	molecular_function unknown
18586	C16orf5	NM_013399.1	676	gtctctcagagagaagatcttga	27533	-	-	-
18587	C17orf1A	NM_031456.2	1394	aaagatcatgctgtaaacctcc	27564	-	-	-
18588	C18orf1	NM_004338.1	256	tgaaattcggccaatctcatc	27603	-	-	molecular_function unknown
18589	C18orf2	NM_031416.1	195	atgacatgaggaatctctgaag	27615	-	-	-
18590	C1orf2	NM_005589.2	1187	cttcaactctctctatgctct	27628	-	-	molecular_function unknown
18591	C1orf24	NM_022083.1	1579	aaigtcaactctcgctctcaaa	27645	-	-	-
18592	C20orf10	NM_014471.2	843	aagccatccagcaatgaaactcc	27695	-	-	-
18593	C21orf45	NM_018944.1	482	atgcacgcccaagaattctgatt	27715	-	-	molecular_function unknown
18594	C21orf5	NM_005128.1	4833	taaaaggtctcaacgaccattagt	27788	-	-	molecular_function unknown
18595	C21orf62	NM_019596.1	733	gggaactcagctcaaatcatata	27846	-	-	molecular_function unknown
18596	C22orf23	NM_032561.2	471	gaattcttaacttccaaagaaata	27852	-	-	molecular_function unknown
18597	C2F	NM_006331.3	269	atcaaacacaaagctatatttg	27880	-	-	-
18598	C40	NM_017546.3	723	ttgcacgaagcccaactgaattg	27875	-	see also 7025 line	-
18599	C6orf11	NM_005452.4	375	aaattcttgatcatctcaaatc	27918	-	-	molecular_function unknown
18600	C6orf15	NM_014070.1	525	caaaacatccatccgtctctaat	27942	-	-	-
18601	C6orf53	NM_016485.2	388	tgtaactctgtccatgcatatgg	27982	-	-	-
18602	C6orf54	NM_014354.1	1018	ttgcagctgcagctcatgatagc	27990	-	-	-

18603	C6orf67	NM_018247.1	372	ccgcagacatgaattactata	27895	-	see also 7344 line	-
18604	C7orf30	NM_138446.1	611	atgacccatctctctctctct	27896	-	-	-
18605	C8orf1	NM_004337.1	869	tatctgcctcatctctctctct	27897	-	see also 2901 line	-
18606	C8orf2	NM_007176.4	1051	agggcgcgcgcgcgcgcgcgc	27898	-	-	Alzheimer disease (アルツハイマー病)
18607	C8orf2	NM_017774.1	316	tgggtctctctctctctctct	27899	-	-	molecular_function unknown
18608	C9orf16	NM_024112.2	129	caagataagctctctctctctct	27900	-	-	-
18609	C9orf27	NM_021206.1	333	cgagatgctctctctctctctct	27901	-	-	-
18610	C9orf5	NM_032012.1	2955	tttggctccacagctctctctct	27902	-	-	-
18611	CDCA1	NM_031423.2	547	aaactctctctctctctctctct	27903	-	see also 9017 line	-
18612	CDCA3	NM_031295.3	639	caagctctctctctctctctct	27904	-	-	-
18613	CDKAL1	NM_017774.1	316	tgggtctctctctctctctct	27905	-	-	-
18614	CENPH	NM_022906.3	456	tactgtctctctctctctctct	27906	-	-	-
18615	CENPJ	NM_018451.2	4164	caagctctctctctctctctct	27907	-	-	-
18616	CDP1	NM_005454.1	493	ttctctctctctctctctctct	27908	-	-	-
18617	CDP1	NM_006324.1	167	ccctctctctctctctctctct	27909	-	-	-
18618	CDG5	NM_014887.1	476	aaagcctctctctctctctct	27910	-	-	-
18619	CDG5	NM_015360.3	535	aaagtaacagcgcctctctct	27911	-	see also 6402 line	-
18620	CH-TOG	NM_014756.1	1776	gaactctctctctctctctct	27912	-	-	molecular_function unknown
18621	CHIC2	NM_021102.2	323	tgcagatctctctctctctct	27913	-	see also 5137 line	-
18622	CHORDC1	NM_012124.1	175	ccgctctctctctctctctct	27914	-	see also 5146 line	-
18623	CHRD	NM_003741.2	2177	agctctctctctctctctctct	27915	-	-	molecular_function unknown
18624	COL6A1	NM_001848.1	831	aaagctctctctctctctct	27916	-	-	Bethlem myopathy (ミオパシー)
18625	CRISP3	NM_006061.1	637	agctctctctctctctctct	27917	-	see also 5904 line	-
18626	CRYPTIC	NM_032545.2	286	ttggcaacacagctctctctct	27918	-	-	molecular_function unknown
18627	CSDFD1	NM_031919.1	293	agctctctctctctctctct	27919	-	-	double-outlet right ventricle (大血管右室連結症), heterotaxy (内臓結位), transposition of great arteries (大血管転位症)
18628	CSN3	NM_005212.1	264	actctctctctctctctctct	27920	-	see also 9052 line	-
18629	CSR2	NM_001321.1	218	tgcacacacagctctctctct	27921	-	-	molecular_function unknown
18630	CTAG1	NM_001327.1	340	gaagcctctctctctctctct	27922	-	-	molecular_function unknown
18631	CTAG2	NM_020994.1	652	caagatctctctctctctctct	27923	-	-	melanoma (メラノーマ)
18632	CTDSP2	NM_005730.2	401	tcctctctctctctctctct	27924	-	-	melanoma (メラノーマ)
18633	CTDSP1	NM_005808.1	516	cgctctctctctctctctct	27925	-	-	molecular_function unknown
18634	CTND1	NM_001331.1	1169	ttctctctctctctctctct	27926	-	see also 884 line	-
18635	CUL4B	NM_003568.2	2452	cgagctctctctctctctct	27927	-	see also 7381 line	-

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18636	CXorf1	NM_004709.1	369	tatcatccaccactgactatattc	279089	-	-	molecular_function	-
18637	CXorf2	NM_001586.1	974	aagagaagaatggccatattatccc	279089	-	-	molecular_function	-
18638	CXorf6	NM_005491.1	2085	acgttaccgctctaaactaact	279132	-	-	molecular_function	-
18639	CXX1	NM_003928.1	394	tggagagctgcgcgtctgttcttct	279137	-	-	molecular_function	-
18640	CYYR1	NM_059954.1	191	atggaaacacgcgcctactctgttgc	279159	-	-	unknown	-
18641	D1P4	NM_006848.1	615	tggcctgttcccccgcgatcttga	279148	-	-	molecular_function	-
18642	D1SC1	NM_013662.1	1173	gagacgttacaacaagaataga	279157	-	-	unknown	-
18643	DKFZP434F081	NM_015453.1	1767	cagtttaactgtctgatacgtata	279211	-	-	protein binding	schizophrenia (精神分裂症)
18644	DKFZP434G1415	NM_031292.1	2082	tttatgtctcatgtctatctctacc	279266	-	-	-	-
18645	B167	NM_015415.1	437	tggatctctgttcttcttaattt	279276	-	-	-	-
18646	C168	NM_015658.1	436	aaggaggagaagaattctgttcc	279280	-	-	molecular_function	-
18647	DKK4	NM_014420.1	745	cggcacatctcgcgataaagat	279283	-	-	signal transduction	-
18648	DLG7	NM_017500.3	1875	aattctctaaatgatacaagat	279339	-	-	see also 5843 line	-
18649	DLGAP1	NM_004746.2	1048	ggatctcaaccacaaagatataaga	279371	-	-	protein binding	-
18650	DLOC1	NM_015890.1	429	gagaaacaaagctcttttcgaaa	279408	-	-	-	-
18651	DONSON	NM_017613.2	1635	tgtctatgaagagctactctaac	279502	-	-	see also 7054 line	-
18652	DP1	NM_005669.3	284	ctgcctcctctgtgtatgtataga	279508	-	-	molecular_function	-
18653	DSCR3	NM_006052.1	315	gtgtctcatatgataaagatc	279512	-	-	see also 4213 line	-
18654	DSCR4	NM_005687.1	131	atattgaaccccgatatttacc	279532	-	-	molecular_function	-
18655	DSCR6	NM_018962.1	521	caattgaagccgcgattgacttc	279541	-	-	molecular_function	-
18656	DSCR8	NM_032589.1	177	gtgaagaagcttctcaattcatt	279542	-	-	unknown	-
18657	DSCR9	NM_148675.1	919	gacctcatgtctcgtgactgaact	279545	-	-	-	-
18658	E46L	NM_013236.1	836	cagaatgcgcgtctgataatt	279577	-	-	see also 5355 line	-
18659	EAT2	NM_055282.1	470	caagctatatttgaattctctgc	279608	-	-	see also 9494 line	-
18660	EML4	NM_019063.2	2507	caagaatcgcgttgatttttaagg	279685	-	-	molecular_function	-
18661	EP8A1L4A	NM_022140.2	704	caattcgcagcttgaagattatga	279723	-	-	see also 8303 line	-
18662	ERH	NM_004450.1	287	ccgaactctataccagacataacc	279755	-	-	molecular_function	-
18663	ET	NM_024311.2	1500	cgactctgactacacgaattctct	279797	-	-	cell cycle	-
18664	FAN3A	NM_021806.1	863	atctcaacgactcttggaattt	279844	-	-	see also 8809 line	-

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18685	FANCO2	NM_033084.2	2311	gagagattggtgtcctctaga	279913	-	-	aplastic anemia(再生不良性貧血), Fanconi anemia(ファンコニ貧血), Fanconi pancytopenia(ファンコニ血球減少)
18686	FANCE	NM_021922.1	879	gagagaccgagatcangtcaact	279908	-	-	aplastic anemia(再生不良性貧血), Fanconi anemia(ファンコニ貧血), Fanconi pancytopenia(ファンコニ血球減少)
18687	FANCF	NM_02725.1	678	tgagaccggctccacaaatca	279978	-	-	Fanconi anemia(ファンコニ血球減少)
18688	FETUB	NM_014375.1	616	cagatctcttgcgaatacaac	280006	-	-	molecular_function unknown
18689	FEZ2	NM_005102.1	202	caggggagcagatttggatgc	280015	-	-	molecular_function unknown
18670	FHL1	NM_001449.3	832	ctctcgttgatgtctacaagact	280042	-	-	signal transduction
18671	FKBP1	NM_022110.3	272	tgagagccgaccactcaatca	280052	-	-	molecular_function unknown
18672	FKSG2	NM_021631.1	442	ctctctgaactaccgaagatgag	280069	-	-	apoptosis
18673	FLJ10625	NM_018128.1	369	gagccctctcaattcagatga	280073	-	-	see also 7269 line
18674	FLJ10769	NM_018210.1	838	tgagctctgagatcttaaacagg	280124	-	-	see also 7429 line
18675	FLJ11294	NM_018383.2	3234	tgaccacagctacgtctaatgtt	280181	-	-	-
18676	FLJ11749	NM_024591.2	305	ttagatccaccagatctgaatgt	280203	-	-	-
18677	FLJ13448	NM_025147.2	455	gagcctatccatcatgataac	280226	-	-	-
18678	FLJ14007	NM_024699.1	882	agctctccctcttgatataact	280249	-	-	-
18679	FLJ20485	NM_019042.2	1950	cctgaagatctgtgcctatgagtg	280279	-	-	-
18680	FLJ21128	NM_025083.2	912	gagctcagccagcagctctctgc	280302	-	-	-
18681	FLJ21827	NM_020153.2	865	cgctctctctactcttgatcaaa	280323	-	-	see also 7771 line
18682	FLJ32452	NM_144576.2	897	tgagatcagctccctgattatc	280340	-	-	-
18683	FSO1	NM_024333.1	436	ctgctctcgcgcctcattgaaa	280349	-	-	molecular_function unknown
18684	GAGEO1	NM_007003.2	236	cagatcgaaacacgtaaatgaga	280385	-	-	-
18685	GAST	NM_002048.1	734	ctctctctggccctctattctacc	280370	-	-	cell cycle
18686	GASB	NM_001481.1	251	cctccacacggaggaacgaact	280371	-	-	see also 1020 line
18687	GKN1	NM_019617.2	466	gtctctgtggtctccaacataca	280401	-	-	cell cycle
18688	GLTSOR2	NM_015710.2	780	cagagctctctcaacacatccc	280410	-	-	molecular_function unknown
18689	GPMB8	NM_005278.2	542	cagcctctccctctctattctctc	280420	-	-	see also 3703 line
18690	GPR155	NM_152529.3	1057	aagctcagattttgactactaat	280474	-	-	-
18691	GRCO9	NM_032841.1	374	caggtgtaaacgagctgatttaag	280529	-	-	-
18692	GREB1	NM_014668.2	1163	cctccacatcgctcttgatgat	280543	-	-	see also 5543 line
18693	GTFE1	NM_016428.3	1177	agtcaccaaagctcagatctctct	280625	-	-	cell cycle, signal transduction
18694	H-jdk	NM_015852.1	1304	tgacaaacattctcttgatctt	280639	-	-	-
18695	H41	NM_017546.2	910	agctagactctggtctctgag	280645	-	-	-
18696	HELD1	NM_194278.1	244	agctcctggtattccatacaaat	280648	-	-	-

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18697	HCG3	NM_005844.2	127	taattccacagcaatgaagaac	280654	-	-	-	-
18698	HERPUD1	NM_014865.1	1075	taacacagacgcgtgcgaact	280674	-	-	-	Alzheimer disease(アルツハイマー病)
18699	HHLA2	NM_007072.2	577	aaagatcgaactgaatataca	280684	-	-	-	-
18700	HRA5L3	NM_007069.1	630	caagtcaacacaaacatgata	280720	-	-	-	-
18701	HS42719	NM_018405.2	245	gaatcgaggaacacattcttgaa	280723	-	-	-	-
18702	HSN11	NM_017493.4	328	atgtcgaatctctctcttata	280732	-	-	-	-
18703	HSPC117	NM_014306.2	438	tgaatcgaattggaatcaact	280739	-	-	-	-
18704	HSPC121	NM_016935.1	189	caagcaacccgaagctatatct	280773	-	-	-	-
18705	HSPC148	NM_016403.1	161	gaacatacctctctataaag	280801	-	-	-	-
18706	HSPC177	NM_016410.2	345	tgaacaagcaattataccatc	280818	-	-	-	-
18707	HSRG1	NM_014940.2	1877	agaccgctctctattgttac	280833	-	-	-	-
18708	IFZT	NM_005632.1	142	ctgccaaagattgctacagtgt	280835	-	-	-	-
18709	IFT1	NM_001548.1	130	atagggaattacattgatgac	280840	-	-	-	-
18710	IFT4	NM_001549.2	1016	atgctatgaactatcgataaa	280865	-	-	-	-
18711	IFT5	NM_012420.1	859	caagcttaagctcttgatgc	280898	-	-	-	-
18712	IFR2	NM_006764.2	185	gaacacctctgaattaaacac	280916	-	-	-	-
18713	IMPACT	NM_018439.1	156	taaaatctacagagataatga	280926	-	-	-	-
18714	JPH1	NM_020647.1	610	cgagctctctgccaacttcc	280946	-	-	-	-
18715	KEPA	NM_007035.2	904	caagcaagatggataaactaaa	280971	-	-	-	-
18716	KIA0174	NM_014761.1	630	tgggagagagagacttatgt	281001	-	-	-	-
18717	KIA0186	NM_021067.1	310	tcagcgtgcactgcgcatacc	281013	-	-	-	-
18718	KIA0285	NM_014807.2	1926	cactatagacgcaattagact	281031	-	-	-	-
18719	KIA0905	NM_014933.1	1253	tggagaaacttgatcattgt	281079	-	-	-	-
18720	KIA1173	NM_020707.2	804	aaatgagcccccaattcttg	281134	-	-	-	-
18721	KREMEN1	NM_032045.3	120	caaccaatgttcgattataga	281150	-	-	-	-
18722	KTN1	NM_004966.1	3924	tgttcacgctgaaccaca	281269	-	-	-	-
18723	LENG1	NM_024316.1	143	gaagccctacagactctacg	281274	-	-	-	-
18724	LENG4	NM_032426.2	1456	tgttgctgcacattatct	281280	-	-	-	-
18725	LGPI	NM_032484.3	1550	tgttgctgcacaaatggt	281290	-	-	-	-
18726	Un10	NM_025187.3	342	ctaacgaagcaggaataaact	281299	-	-	-	-
18727	LLGL1	NM_004140.2	889	ctatgcgaagcaggaatgac	281333	-	-	-	-
18728	LMGD1	NM_014583.2	1041	cgactcgatgaactaatgac	281361	-	-	-	-

18729	LMNB2	NM_032737.2	1559	aggagatgcgtcacaaatcagc	281395	-	-	molecular_function	-
18730	LMNB	NM_005150.3	1639	caggctcaagctcgaaatctcgc	281378	-	-	molecular_function	-
18731	LOC13061	NM_133802.1	484	ctcgccgcagcgaagaagaatga	281390	-	see also 9640 line	unknown	-
18732	LOC5974	NM_018845.1	290	ctgcctctcagcaatcgtatcatc	281385	-	-	-	-
18733	LOC91614	NM_139100.1	1206	caagacgcacagactatgaata	281430	-	-	-	-
18734	LPN1	NM_145693.1	1243	tgtctctcagcgcgtctctctgc	281479	-	-	molecular_function	-
18735	LPP	NM_005578.1	1638	ctctcaaacctcctcaatcaata	281522	-	see also 3879 line	unknown	-
18736	LRBA	NM_006726.1	2401	tggatctgaattctatcaaac	281612	-	see also 4735 line	-	-
18737	LRG	NM_052972.1	636	aggagctcgcctccaatagaagc	281797	-	-	molecular_function	-
18738	LRPPRC	NM_133259.2	1748	tttcaacaagatgaagactattgc	281856	-	see also 9557 line	unknown	-
18739	LYRCSB	NM_021221.1	935	ctctgaagaatgaacttctcacc	281920	-	-	-	-
18740	LY9	NM_002348.1	866	tctctctgttttttaaacacatc	281939	-	-	molecular_function	-
18741	MAG30	NM_014573.1	643	gagccctctctcaagatcttaag	281945	-	-	unknown	-
18742	MAD1L1	NM_003550.1	835	caagacccgcgcacatgactatg	281953	-	-	-	-
18743	MAGEA4	NM_002392.3	834	tctctctgggcacaaatgcagtc	281959	-	-	molecular_function	prostate cancer(前立腺癌)
18744	MAGEA5	NM_021049.2	423	ctgcctcctcgattcaactatctgc	281961	-	-	unknown	melanoma(メラノーマ)
18745	MAGEA9	NM_005385.4	823	tggcctctctgcctgtagatctgc	281963	-	-	unknown	-
18746	MAGEL2	NM_019066.2	1623	ctgagccactgcagatgatgatttc	281987	-	-	molecular_function	-
18747	Magma	NM_016069.8	285	cagaagaactatgaacactattt	281992	-	-	unknown	-
18748	MCSP	NM_030663.2	378	ctgaagtctcaaccttaacatgc	281994	-	-	unknown	-
18749	MFAP4	NM_002404.1	140	ctgcactctgaacacactatctgc	281998	-	-	extracellular matrix	Smith-Magenis syndrome chromosome region(Smith-Magenis症候群染色体部位)
18750	MGC23947	NM_152278.1	281	gcgcctctgaacgaattgaac	282020	-	-	structural constituent	-
18751	MGC26879	NM_155704.2	21	tgcctctctgaacctctatcttc	282021	-	see also 10013 line	-	-
18752	MGC29816	NM_152272.1	531	gaggaagatgcctgcctgataca	282110	-	see also 9825 line	-	-
18753	MF2	NM_005439.1	239	ctgatgatgcctcttcttatctca	282125	-	-	molecular_function	-
18754	MLN51	NM_007355.3	2107	caggctctgaactcttctgaat	282170	-	see also 5090 line	unknown	-
18755	MM1	NM_002430.1	4045	tggccaaagtgcgcagactgctgc	282187	-	cell cycle	molecular_function	meningioma(メニンジオーマ)
18756	MORF4L2	NM_012286.1	639	gaagcggccttttaagaataaat	282207	-	-	unknown	-

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18757	MPV17	NM_024327.3	510	ttagcgtgctgcacattgttgc	282227	-	-	molecular_function	-
18758	MRPL39	NM_017446.2	141	atgcagcactactctatata	282226	-	see also 7013 line	unknown	-
18759	MRPL40	NM_003774.2	138	atccagcactactctcttttt	282218	-	-	-	-
18760	MRPS24	NM_032014.1	475	gtctctctcaagctgtatata	282353	-	-	-	-
18761	INSLN	NM_005823.2	1016	atagagagatctctctctctac	282337	-	-	-	-
18762	INSMB	NM_024443.2	83	atgcagagcagctctctcttca	282346	-	-	-	prostate cancer (前立腺癌)
18763	MJUM-1	NM_032653.2	256	tgcctccgagcagctctctcaaa	282358	-	-	-	-
18764	NAG	NM_015909.1	1960	cgacttgcagcagctactatag	282435	-	-	-	-
18765	NAP1	NM_016481.2	524	tgcacacccgctctagacatca	282498	-	-	-	-
18766	NBR2	NM_005821.2	598	tgtctctctgcacaaagcttc	282512	-	-	molecular_function	-
18767	NCS1N	NM_015331.1	2003	atctcttctactcagcagcttc	282555	-	see also 6367 line	unknown	-
18768	NDRG2	NM_016250.1	265	ttgcactctcaacttaactctg	282574	-	see also 6753 line	-	-
18769	NEDF	NM_016079.1	62	tgtctcaatgactgtctctgaag	282574	-	transcription_regulat	-	-
18770	NEUGRN	NM_016645.1	677	atgtgacagctacggtatttaca	282581	-	or	-	-
18771	NOC4	NM_006067.3	740	gaacactctctgacttctgataa	282596	-	-	molecular_function	-
18772	NOLA3	NM_018648.2	122	atgcagagagagagagctctatac	282600	-	see also 7535 line	unknown	-
18773	NPC2	NM_006432.3	372	gaacctcgtctttttatagctgc	282611	-	-	molecular_function	Niemann-Pick disease (ニーマン・ピック病)
18774	NRM	NM_007243.1	86	ttagctctctgctcttctactcc	282615	-	-	unknown	-
18775	NTV2L	NM_006181.1	1559	ctgcctcctgcctctctctctct	282619	-	-	-	-
18776	NTNG1	NM_014891.1	1438	tgcactctctctctctctctctgc	282643	-	see also 8088 line	-	-
18777	NTNG2	NM_032358.1	731	cggtgcctctctctctctctctgc	282651	-	-	-	-
18778	NXP3	NM_007225.1	493	cgactctcactctccacacatg	282658	-	-	molecular_function	-
18779	NXP4	NM_007224.1	843	aaagttctacgtctctctctctgc	282662	-	signal transduction	unknown	-
18780	NYREN18	NM_016118.3	1114	aaagatctcgaacactatcagct	282690	-	see also 6672 line	-	-
18781	OFD1	NM_003611.1	316	tgtgcactctcaacatgtttcc	282703	-	see also 2425 line	-	deafness (聴)
18782	OTOF	NM_004802.2	1778	aaactgtgcctgcctctctgagc	282795	-	-	-	-
18783	P8	NM_012385.1	299	tgtgtgcacagctgcagacttcca	282919	-	-	molecular_function	-
18784	PART1	NM_016590.2	147	tcgtactgtgtgtctatattctat	282924	-	apoptosis	unknown	-
18785	PD001LG	NM_025239.2	542	gtttacgtgtgcgtgtacccactgc	282929	-	see also 6935 line	-	-
18786	PHEM1	NM_005705.3	838	gggtttgacccacactttgtctcc	282941	-	-	-	-
18787	PKP2	NM_004572.1	2451	atgcacgtgcctctctctctctcc	282971	-	-	structural molecule	-
18788	PLA1	NM_021796.1	800	gtttacgtctctctctctctctct	282981	-	-	-	-
18789	POLA2	NM_022689.2	1821	caatttcacgtctctctctctctcc	283033	-	see also 1751 line	-	-
18790	POPDC2	NM_022135.2	175	aggtttacgtctctctctctctcc	283038	-	-	-	-
18791	POPDC3	NM_022381.3	1195	cggtttacgtctctctctctctcc	283072	-	see also 8345 line	-	-
18792	PP3111	NM_022156.3	765	cggtttacgtctctctctctctcc	283083	-	-	-	-
18793	PP35	NM_018361.1	423	ctgtgtccacatgtctctctctct	283088	-	-	-	-

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18824	SOST	NM_025237.1	120	gggtacagcgttcacaaatga	284432	-	-	molecular_function	-
18825	SPAG8	NM_012436.2	152	ggtctcgtctcttcttccatca	284440	-	-	unknown	-
18826	SPAT13	NM_006038.2	1700	ctgtctcagcgttcctctcttctg	284482	-	-	-	-
18827	SPRY3	NM_005840.1	1021	ctgtctcagcgttcctctcttctg	284482	-	see also 4207 line	-	-
18828	SOSTM1	NM_003900.2	444	tggtacagcgttcctctcttctg	284495	-	signal_transduction	-	-
18829	ST7	NM_013437.2	293	cagtgagcaatcatctctaaagt	284515	-	see also 5439 line	-	-
18830	STAF55(ga mma)	NM_014860.1	523	tggtctcaccctccatcagcttc	284582	-	-	-	-
18831	SUMF2	NM_013411.1	102	tggtctcagcgttcagaaatggaca	284595	-	-	-	-
18832	SURF2	NM_017903.2	360	cagtcagctctgtgaaatataga	284603	-	-	molecular_function	-
18833	SURF4	NM_0033161.2	796	ctggaccattccagctctcaagc	284616	-	-	unknown	-
18834	SYMPK	NM_004819.1	1805	cagcccaagtcgtcctcaatgaatc	284634	-	-	unknown	-
18835	TBL2	NM_012453.1	900	tggtctcagcgttcctcgaactaaag	284651	-	-	unknown	-
18836	TCTEIL	NM_006520.1	340	atggaactctacccctaaagtctg	284686	-	-	molecular_function	-
18837	TEX27	NM_021943.1	303	tccatacagcagcgaactcttag	284692	-	see also 8205 line	-	-
18838	TFG	NM_006070.3	1265	caatacagcagcgaactcttag	284731	-	see also 4215 line	-	-
18839	THSD3	NM_182509.2	367	tcccaaacacacacttgatgac	284739	-	-	-	-
18840	THY1	NM_006288.2	212	cagctcagccctcagacaaaga	284744	-	see also 4378 line	-	-
18841	TIMP3	NM_000362.3	1599	tccctctacacttgatgttaact	284750	-	see also 296 line	-	-
18842	TLE4	NM_007006.3	1684	atgaaagatcccgatgttgatcc	284766	-	see also 4888 line	-	-
18843	TMA5F1	NM_014220.1	364	atgcagctctctctcttgatg	284792	-	-	molecular_function	-
18844	TMA5F1	NM_023003.1	1103	tgcctacgtctctctctctcaaa	284835	-	see also 8537 line	-	-
18845	TMEFF2	NM_016192.2	1098	atgtcttggtctgctgctcaaga	284854	-	see also 6717 line	-	-
18846	TMCNT14A	NM_014051.2	224	tggttggtctctctcttgatg	284877	-	-	-	-
18847	TME18	NM_021259.1	644	gcgggttgctcgaattctccatca	284885	-	-	-	-
18848	TMEPA1	NM_020182.3	940	atgcgcgcaccccaaacagagac	284896	-	-	-	-
18849	TPARL	NM_018475.2	749	atgctgctctctcaactactca	284914	-	signal_transduction	-	-
18850	TPD52L1	NM_003287.1	313	cagctagagacgaatctcaaac	284926	-	-	-	breast cancer(乳癌)
18851	TSGA10	NM_025244.1	1608	cagaatcgtctggcgaatttgatg	284969	-	-	-	-
18852	TUSA	NM_007177.1	719	atggaatcctcagctctcaatcagc	285008	-	-	molecular_function	-
18853	TXNIP	NM_006472.1	1172	tggttggttgatctcgaatctac	285026	-	-	unknown	-
18854	UACA	NM_018003.1	662	atgcttgatctcgaatttgatg	285052	-	-	-	-
18855	USP6NL	NM_014888.1	2624	tacatactccctcagatataaaa	285190	-	-	-	-
18856	UXT	NM_004182.2	238	aagctaaactcctggagatttat	285196	-	-	-	-
18857	VM2	NM_004183.1	762	atgctcctacagcttgatgttgctc	285206	-	channel	-	Best disease(ベスト病)

图46 (续七)

18858	WMD2L1	NM_017682.1	588	tgagatgcttccagaatctgact	285228	channel	-
18859	WMD2L2	NM_153274.1	586	cggagagagcgcgaatgaactga	285234	channel	-
18860	WMD2L3	NM_153239.1	610	ctctctgcacacatcacatcttg	285246	channel	-
18861	WMDR6	NM_016031.2	2587	cggctctggatgtaagctaga	285283	-	-
18862	WMDC1	NM_021197.2	260	ccgctctgcagaatctctgg	285288	-	molecular_function
18863	WIT-1	NM_015855.2	1021	cggctctgaagctgataaataat	285295	-	molecular_function
18864	WSB1	NM_015626.7	1250	cggctgtagtacctgtctcttt	285328	-	unknown
18865	XG	NM_175569.1	450	tgagatgtactactaaatctatg	285345	-	molecular_function
18866	YIF1	NM_020470.1	195	atgacaaagcggctgtacttc	285347	-	unknown
18867	ZNF200	NM_003454.2	1988	aagatttgatcgctctcaact	285371	transcription_regulat	-
18868	ZP4	NM_021186.2	747	tgagctgcgcgcgcatatgaaa	285388	or	-
18869	AGS3	NM_015507.2	365	agctcagcagccctctacacatc	285403	receptor_activity	-
18870	Clor33	NM_018183.2	280	ttggctctgagcctctctctgaga	285417	-	-
18871	DNP3	NM_004632.2	450	tgcctatccatctacataagatc	285436	-	-
18872	FLJ12331	NM_026986.1	541	agctctctacacagaaatg	285460	see also 3147 line	-
18873	GADD45A	NM_001924.2	701	aagatctctgcctgaagcaact	285462	see also 1227 line	-
18874	GADD45B	NM_015675.1	224	tgcttgcccaagattgatgaagt	285469	apoptosis, kinase related	structural constituent of ribosome
18875	GADD45G	NM_006705.2	175	cgggaagacgcgcgtcatgcttc	285473	apoptosis, kinase related	structural constituent of ribosome
18876	LACTB	NM_032857.2	508	gagacagattatcgagatctctag	285480	see also 9314 line	-
18877	MGC9651	NM_152301.3	307	gaagcatctgcctctctatcac	285508	-	-
18878	MRPL11	NM_016050.2	413	ctgacctctgaagcatgtctatga	285515	-	-
18879	MRPL13	NM_014078.4	820	ctgagctccaccctgagatcttacc	285535	-	structural constituent of ribosome
18880	MRPL14	NM_032111.1	266	aaagctggcagcagcatctact	285538	-	-
18881	MRPL15	NM_014175.2	307	ggcttgtagcagagcatctgctt	285546	-	-
18882	MRPL16	NM_017840.2	897	agctctgagctccatctactgctg	285579	-	-
18883	MRPL17	NM_022001.2	324	ctgctccctctgctgacaaagatca	285580	-	-
18884	MRPL18	NM_014161.2	354	tgcccaagctggcggctatgaag	285591	-	-
18885	MRPL19	NM_014783.2	570	tgatgatagcttctctactta	285614	-	structural constituent of ribosome
18886	MRPL2	NM_015950.2	775	gagatctacacattgcatcac	285643	-	-
18887	MRPL22	NM_014180.2	50	ttggcttgctgatttgatcaatca	285650	-	-
18888	MRPL24	NM_024540.2	533	gagatctgagctggagatcttactg	285674	-	-
18889	MRPL27	NM_016504.2	313	ggagatgactcgtctactactgaag	285685	-	-

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18890	MRP130	NM_016503.2	224	aagctctgagctctctattgt	285691	-	-	structural constituent of ribosome
18891	MRP132	NM_031903.1	295	tacagccacattgaaatgaacc	285712	-	-	structural constituent of ribosome
18892	MRP135	NM_016862.2	299	ctgcacgtcagatctcacaata	285733	-	-	structural constituent of ribosome
18893	MRP136	NM_032479.2	124	agccctctccacattctattt	285744	-	-	structural constituent of ribosome
18894	MRP137	NM_016491.2	410	cgcctctctcaggttgtaagc	285753	-	-	structural constituent of ribosome
18895	MRP14	NM_015955.2	1113	tgcagagacctaagttccagacc	285782	-	-	structural constituent of ribosome
18896	MRP141	NM_032477.1	236	ctgaggtctctcagatcaaaag	285783	-	-	structural constituent of ribosome
18897	MRP142	NM_014050.2	383	tcgccagatctctgctcaca	285790	-	-	structural constituent of ribosome
18898	MRP143	NM_032112.2	293	gatttargtcgaataccttaac	285798	-	-	structural constituent of ribosome
18899	MRP146	NM_022163.2	640	ttggacacacacattcaagttc	285815	-	-	structural constituent of ribosome
18900	MRP147	NM_020409.2	662	gaaagacagccgcattcaagc	285842	-	-	structural constituent of ribosome
18901	MRP148	NM_016055.3	397	cttagttgaattctactaagt	285849	-	see also 0645 line	structural constituent of ribosome
18902	MRP150	NM_019051.1	301	cttctctcaaatcaattcttc	285874	-	-	structural constituent of ribosome
18903	MRP19	NM_031420.2	307	ccagcagacatgcctctcaagc	285890	-	-	structural constituent of ribosome
18904	MRP14	NM_022100.1	326	cttagagcttagttctatagctc	285928	-	-	structural constituent of ribosome
18905	MRP15	NM_031280.2	109	tgcagagacgcagtttcttcag	285930	-	-	structural constituent of ribosome
18906	MRP17	NM_015969.2	134	tgcatacctattttataagat	285950	-	-	structural constituent of ribosome
18907	MRP18A	NM_018135.2	303	agctcgtcccccagaagata	285957	-	-	structural constituent of ribosome
18908	MRP18B	NM_014045.2	63	cgaagctctctctactcttc	285964	-	-	structural constituent of ribosome
18909	MRP2	NM_016034.2	129	aagcgcagcgcctctatgatac	285978	-	-	structural constituent of ribosome
18910	MRP21	NM_018997.1	721	tgcctcgaagaataactcttg	285990	-	-	structural constituent of ribosome
18911	MRP23	NM_016070.2	257	gttatagttctgtctcaaaagc	286000	-	-	structural constituent of ribosome
18912	MRP25	NM_022497.3	194	gttaagttctgcagatgatta	286004	-	-	structural constituent of ribosome
18913	MRP26	NM_030811.3	132	acagaccccttgccaattccaag	286012	-	-	structural constituent of ribosome
18914	MRP27	NM_015084.1	1148	atgcacatagactcttgacgt	286035	-	-	structural constituent of ribosome
18915	MRP31	NM_005830.2	668	gaactctgattctgtttgata	286043	-	-	structural constituent of ribosome
18916	MRP33	NM_016071.2	322	atcagacactcagctttctg	286059	-	-	structural constituent of ribosome
18917	MRP34	NM_023936.1	363	tgcagactcttaacctccaagc	286060	-	-	structural constituent of ribosome
18918	MRP35	NM_021802.2	546	caaacacagagttatgacttaa	286073	-	-	structural constituent of ribosome
18919	MRP55	NM_031902.3	263	tacagagagcagagctatttat	286096	-	-	structural constituent of ribosome

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18920	MRPS6	NM_032476.2	184	cgcctcagcagctgcattatcc	286126	-	-	structural constituent of ribosome	-
18921	MRPS7	NM_015971.2	294	gaagcctatctatctatctatcc	286128	-	see also 6590 line	-	-
18922	NOL2	NM_017839.2	400	atctaatctccctcctcagcgc	286139	-	-	-	-
18923	RPL10L	NM_080749.2	329	tgcagcagatgctttccatcagc	286142	-	-	structural constituent of ribosome	-
18924	RPL27	NM_000989.2	256	tgttgaaagtctatactcaaat	286143	-	-	-	-
18925	RP-S27L	NM_015920.2	79	tctgtcagagatttactaccc	286144	-	-	-	-
18926	UBA52	NM_003333.2	151	ctgacagcagcgtctgatattt	286152	-	-	structural constituent of ribosome	-
18927	76P	NM_014444.2	378	cgcgctgcagcagcattatctc	286160	-	see also 5676 line	-	-
18928	AGTA2	NM_001613.1	640	gttgctattctctctgtactact	286207	-	-	structural constituent of muscle	-
18929	ACTC	NM_005159.2	995	tgtctccctcagcgttaatcc	286215	-	see also 3626 line	-	-
18930	ACTG2	NM_001615.2	943	ttagctcgtcgaagccttatat	286223	-	-	structural constituent of muscle	-
18931	AGTL7A	NM_006687.2	1245	tgtgtccacgccttctgctacg	286239	-	see also 4721 line	-	-
18932	AGTL7B	NM_006686.2	851	cgaacgcgaacactctactatt	286245	-	-	-	-
18933	ACTR10	NM_018471.1	334	gaacccgcgaattctctatttc	286255	-	see also 7492 line	-	-
18934	ACTR1A	NM_005736.2	716	gaactcgttaactctccctcaaac	286307	-	see also 3980 line	-	-
18935	ACTR1B	NM_005735.2	662	ttagctttctccgacactcaaaa	286323	-	-	structural constituent of cytoskeleton	-
18936	ACTR3	NM_005721.3	545	tgtgcactccgcctctgctatg	286343	-	-	structural constituent of cytoskeleton	-
18937	ACTR6	NM_022496.2	124	gtctcgtctatctatctatctca	286352	-	see also 8419 line	-	-
18938	ACTR8	NM_022893.3	948	gaagtctctatctcgaagctactc	286443	-	see also 8520 line	-	-
18939	ACTR11	NM_138289.1	821	agcgcgtgttaataatcactcaaa	286497	-	-	-	-
18940	ANK2	NM_001146.2	4287	ttagcagcctatctatctatgga	286633	-	see also 730 line	-	-
18941	ARPC1B	NM_005720.2	274	cgcgaatctaacgcgtttctgacc	286813	-	-	structural constituent of cytoskeleton	Alzheimer disease (アルツハイマー病)
18942	ARPC2	NM_005731.2	842	gtctctaaagccttatcttcaaa	286842	-	-	-	-
18943	ARPC3	NM_005719.2	289	agcgcctctgatatactactct	286844	-	-	structural constituent of cytoskeleton	-
18944	ARPC4	NM_005718.2	358	atctcgaagcagaagcctctttat	286847	-	see also 3963 line	-	-

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図46 (続き)

18945	AFPC5	NM_005717.2	532	ttgaagaccctctgcacaaagc	286856	-	-	structural constituent of cytoskeleton	-
18946	ARPM1	NM_032487.2	1298	agcgtctgagtaagagatctatgc	286877	-	-	structural constituent of eye lens	-
18947	BFSP1	NM_001195.2	1028	tgatctcggcttggaagactcta	286893	-	-	structural constituent of eye lens	-
18948	BFSP2	NM_003571.2	683	agcctcgagcagatgactctaa	286917	-	-	structural constituent of eye lens	-
18949	ODZAP	NM_012120.1	975	tgagagagcagacttaattgtaa	286952	-	see also 5143 line	cataract (白内障)	-
18950	CTNNA2	NM_004389.1	736	acgaagcccaaccagacttatgt	286990	-	see also 2951 line	-	-
18951	CYL C2	NM_001340.1	165	acgggacaacacaggtttctataa	287045	-	-	structural constituent of cytoskeleton	-
18952	D10S170	NM_005436.1	1569	ggagttatctcagctctcactatc	287081	-	-	structural constituent of cytoskeleton	-
18953	DSP	NM_004415.1	7362	gggtccacagctattgctctatag	287269	-	-	structural constituent of cytoskeleton	-
18954	FLJ12785	NM_024855.2	991	gcctctgcagcagcagctctctatg	287325	-	see also 8733 line	TBP-associated factor 125	-
18955	GFAP	NM_002055.2	383	gcagctctcgctcagatcaactca	287337	-	-	structural constituent of cytoskeleton	alexander disease (アレキサンダー病)
18956	INA	NM_032727.2	1270	tgacacacagtgctgtaagcattt	287344	-	-	structural constituent of cytoskeleton	-
18957	KRT1	NM_006121.2	787	ttctatcaatctcgttggtgattcg	287361	-	-	structural constituent of cytoskeleton	epidermolytic hyperkeratosis (表皮剥離性角質増殖症)
18958	KRT13	NM_002274.2	712	gctctcactctctgaagactga	287377	-	-	structural constituent of cytoskeleton	white sponge nevus (白色海綿状母斑)
18959	KRT20	NM_019010.1	130	ggagacgacacccacagcgtttatgg	287382	-	-	structural constituent of cytoskeleton	-
18960	KRT2A	NM_000423.1	532	caagctctctcaactgaagcttga	287413	-	-	structural molecule	epidermal ichthyosis bullosa of Siemens (皰皮水疱症)
18961	KRT5	NM_000424.2	1878	cgactccagctgcgaattctctct	287428	-	-	structural constituent of cytoskeleton	breast cancer (乳癌)、epidermolysis bullosa simplex (単純型表皮水疱症)
18962	KRT9	NM_000226.1	1078	aagacacatcagactcaattatga	287442	-	-	structural constituent of cytoskeleton	epidermolytic palmoplantar keratoderma (皰皮掌蹠角皮症)
18963	LOC81569	NM_030812.1	813	ttctctctctcccaagactctgg	287456	-	-	structural constituent of cytoskeleton	-
18964	LOR	NM_000427.1	284	ccgtctggagcagctcaagctctcc	287464	-	-	structural constituent of cytoskeleton	progressive symmetrical erythrokratoderma (進行性対称性紅斑性角皮症)、Vohwinkel syndrome (Vohwinkel症候群)

図46 (続き)

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18965	MSN	NM_002444.1	979	ccctcgcaacctgataccattg	287498	-	see also 1560 line		
18966	NEF3	NM_005382.1	1134	tcctcatttgcgcataaccagg	287510	-		structural constituent of cytoskeleton	-
18967	NEFL	NM_006158.1	1190	aggagaccacctcatttacc	287533	-		structural constituent of cytoskeleton	-
18968	PPL	NM_002705.2	2477	asgtctaaaggactatagtta	287539	-		structural constituent of cytoskeleton	-
18969	SCAM-1	NM_005775.2	1004	aggacctcgaggcaattgagacc	287562	-		structural constituent of cytoskeleton	-
18970	WIM	NM_003380.1	1469	tagagatgacacagttatacaag	287584	-		structural constituent of cytoskeleton	-
18971	COL11A2	NM_080679.1	755	aagttcctgtccagttatggaca	287591	-		structural constituent of cytoskeleton	-
18972	AMELY	NM_001143.1	189	tgtttaccagagctgattagaacc	287615	-		structural constituent of tooth enamel	-
18973	CHAD	NM_001267.1	437	cggtctcaatcaactatctact	287622	-		extracellular matrix	-
18974	COL10A1	NM_004932	2066	ccagatcaattgcctatadctcc	287644	-	see also 386 line	structural constituent	-
18975	COL11A1	NM_001854.2	1788	atgttacccttccattatgttg	287678	-	see also 1138 line		-
18976	COL12A1	NM_004370.4	6033	ctatttcggagcaactctatttc	287845	-	see also 2829 line	extracellular matrix	-
18977	COL15A1	NM_001855.2	4085	tttgatgtcgagacataatgaca	287955	-		structural constituent	-
18978	COL19A1	NM_001856.2	3069	ggatctctaccctatgacagcc	287979	-	see also 1199 line		-
18979	COL19A1	NM_003682.2	3122	ctgtttacacagcaatgtgttt	287998	-			-
18980	COL19A1	NM_001858.2	737	atgacggcagctatttctctcg	288017	-	see also 1201 line		-
18981	COL1A1	NM_000088.2	624	gaaataatcaaccggagagatttc	288048	-		Ehlers-Danlos syndrome(エーラー-ダンロス症候群)、osteogenesis imperfecta(骨形成不全症)、dermatofibrosarcoma protuberans(隆起性皮膚癌)	
18982	COL1A2	NM_000089.2	148	tttgatgtatcgacagctgtttg	288053	-		Smad3/Sp-1 heterodimer	
18983	COL27A1	NM_032888.2	661	tttagcgcagtgctctcacattta	288066	-	see also 9334 line		

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図46 (続き)

18984	COL2A1	NM_001844.3	1517	cgagcagctgaacctgagtgcg	288115	-	-	-	achondrogenesis(軟骨無形成症), arthrochondrodysplasia(軟骨無形成症), hypochondrogenesis(軟骨無形成症), Kniest dysplasia(Kniest形成不全症), osteoarthritis with mild chondrocyte atypia(寛鬆性関節症), primary osteoporosis(原発性骨質減少症), spondyloepiphyseal dysplasia(骨軟骨發育不全症), spondyloepiphyseal dysplasia(骨軟骨發育不全症)
18985	COL3A1	NM_000090.2	315	atgtgcagatcaagaatgagct	288128	-	-	-	ATP-dependent DNA helicase II, 70 kDa subunit
18986	COL4A1	NM_001845.2	4175	caagctcttcagcagctctctcaaa	288165	-	-	-	Smad3/Sp-1 heterodimer
18987	COL4A2	NM_001846.1	2022	ccctgctgagctctgctgctgctc	288191	-	-	-	Smad3/Sp-1 heterodimer
18988	COL4A4	NM_000092.2	5115	tgcagctggttctatctctgtata	288232	-	-	-	extracellular matrix structural constituent
18989	COL4A5	NM_000495.3	667	ggttttaacacagctgactataatta	288248	-	-	-	Alport syndrome(アルポート症候群), hematuria(無症候性血尿)
18990	COL4A6	NM_001847.1	4718	cgagcagatgaataaactaact	288315	-	-	-	see also 388 line
18991	COL5A2	NM_000393.2	4027	ccgacagctgctgctgctgctgctc	288343	-	-	-	see also 315 line
18992	COL5A3	NM_015719.2	4838	ctgctctatcccgacagagact	288368	-	-	-	extracellular matrix structural constituent
18993	COL6A2	NM_001848.2	1241	agagcagcagcagcagcagcagc	288385	-	-	-	-
18994	COL6A3	NM_004369.1	7757	atctcgagcagcagcagcagcagc	288518	-	-	-	Bethlem myopathy(ミオパシー) Bethlem myopathy(ミオパシー), Ulrich 筋ジストロフィー
18995	COL7A1	NM_000094.2	594	caaggggctcagctattctctgt	288548	-	-	-	bullosa dystrophy(表皮水疱症), epidermolysis bullosa(表皮水疱症), epidermolysis bullosa dystrophica(表皮水疱症), epidermolysis bullosa simplex(単純型表皮水疱症), toenail dystrophy(足爪欠損), pruriginosa epidermolysis bullosa(掻痒性表皮水疱症)
18996	COL8A1	NM_001850.3	345	aaagcagctgctcctcctcaacttc	288569	-	-	-	serine protease inhibitor
18997	COL9A1	NM_001851.2	2876	tgtcagcagcagcagcagcagcagc	288624	-	-	-	-
18998	COL9A2	NM_001852.3	1187	ggctcctcagcagcagcagcagcagc	288631	-	-	-	see also 1197 line
18999	COL9A3	NM_001853.2	1620	ggagctgctgctgctgctgctgctgct	288633	-	-	-	extracellular matrix structural constituent
19000	KAL1	NM_000216.1	1089	ggagctgctgctgctgctgctgctgct	288650	-	-	-	epiphyseal dysplasia(多発性少年性軟骨症) structural constituent structural constituent serine protease inhibitor

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圖 4.6 (續表)

19001	LAMA4	NM_00290.2	628	tggttatatagaattccatca	288601	-	-	structural molecule	-
19002	LUN	NM_002345.2	1098	cagctcttcacggagatgatgtg	288663	-	-	translation	osteosarcoma(骨瘤性骨肉瘤)
19003	MAGP2	NM_003480.1	546	cgattttagagatgaactctg	288873	-	-	extracellular matrix	-
19004	MATN1	NM_002379.2	1505	agctgctgctgctgaatgctcc	288885	-	see also 1532 line	structural constituent	-
19005	MATN3	NM_002381.2	1437	cgactcgatctcttcgaagaagca	288917	-	-	extracellular matrix constituent	epiphyseal dysplasia(多发性少年性骨发育不良)
19006	MEPE	NM_002020.1	763	caacgcttatccagatctctcaag	288953	-	-	structural constituent	-
19007	MFAP1	NM_005926.1	174	ccgtccacgcttccaatgagaaa	288978	-	-	extracellular matrix constituent	-
19008	MFAP2	NM_002403.2	477	ccgccctgctgacgtcaattaaca	289012	-	-	structural constituent	-
19009	MFAP3	NM_005927.3	671	ggaactagcgtttcaattgagt	289023	-	-	structural constituent	-
19010	OPTC	NM_014359.2	227	agcgcattctcttgaattctgac	289053	-	-	extracellular matrix constituent	-
19011	PRELP	NM_002725.2	496	agccctcgcgagatgaactcgg	289070	-	see also 3787 line	serine protease inhibitor	-
19012	TECTA	NM_005422.1	509	tgatgcctgctggtctctctaca	289093	-	-	structural constituent	-
19013	TFPI2	NM_006528.2	180	ctgtctctgcccctgagctacg	289204	-	-	extracellular matrix constituent	-
19014	TNR	NM_003285.1	2855	cgactaccgaatcagaactcagc	289268	-	see also 2220 line	structural constituent	-
19015	MYBPH	NM_004997.1	1327	agcctctcgcacctcagatgctc	289294	-	see also 3462 line	structural constituent	-
19016	MYOM1	NM_003803.1	761	ggcctcctgcctgaattgtaaa	289310	-	see also 2600 line	structural constituent of muscle	-
19017	MYOM2	NM_003970.1	1829	gcgaacctcttcgagatacgtctc	289420	-	-	structural constituent of muscle	-
19018	TCAP	NM_003673.2	200	gcgtcgcctgcctgctatgctgc	289467	-	-	structural constituent of muscle	-
19019	TTID	NM_006790.1	1318	aaagaaaccaagtgttatctaca	289492	-	see also 4781 line	structural constituent of muscle	-
19020	CRYAA	NM_000394.2	261	tgatgcacccggagaaagttctg	289512	-	see also 316 line	structural constituent of muscle	-
19021	CRYAB	NM_001885.1	405	attatagacctctcaaccattact	289516	-	see also 1208 line	structural constituent of muscle	-
19022	CRYBA1	NM_005208.3	529	tgatattctggtatgatacata	289537	-	see also 3659 line	structural constituent of muscle	-
19023	CRYBA2	NM_005209.1	539	cagcagaagcttctctattacc	289546	-	-	structural constituent of eye lens	-
19024	CRYBA4	NM_001886.1	501	ggcctcagcggagattctgctg	289553	-	-	structural constituent of eye lens	-

19025	CRYBB1	NM_001887.3	279	agggccctccagcagattctgc	289557		structural constituent of eye lens	-
19026	CRYBB3	NM_004076.3	346	tgctccacagcgcgtgataaga	289566		structural constituent of eye lens	-
19027	CRYGA	NM_014617.2	609	ggagcgggtaccgattgttact	289585		structural constituent of eye lens	-
19028	CRYGB	NM_005210.2	540	tgacagtgatcatgatttttact	289595		structural constituent of eye lens	-
19029	CRYGD	NM_006891.2	358	cgcgttcgcctccatgaattcc	289600		structural constituent of eye lens	cataract(白内障)
19030	CRYGS	NM_017541.2	324	gagcccaigtatgaatttcagatc	289612		structural constituent of eye lens	-
19031	LM2	NM_030657.2	633	agccctaacgcggtgcataatgc	289616		structural constituent of eye lens	-
19032	AMBN	NM_016519.2	892	atggcctctatgagccattttcc	289629		structural constituent of eye lens	-
19033	ENAM	NM_031889.1	906	ggagatccctccctctattatc	289659		structural constituent of eye lens	-
19034	TUFT1	NM_020127.1	959	gcggaaatccgcgaattgataag	289742		structural constituent of eye lens	-
19035	KRTH46	NM_003771.3	1236	atccagagctctatgaattgc	289754		structural constituent of epidermis	-
19036	KRTH2	NM_030303.3	755	ctctatctctctgtctgaataga	289757		structural constituent of epidermis	-
19037	KRTH4	NM_033045.2	1030	ctgaactctgtgaggtatctgc	289765		structural constituent of epidermis	-
19038	CD33	NM_023948.3	521	ttgagcgcagagagatctgaaag	289766		structural molecule	-
19039	ARVCF	NM_001670.1	1673	ctgtgaacactgtctatctatga	289771		structural molecule	-
19040	BFAR	NM_016561.1	623	tgctctctctgtctctatctgcg	289778		structural molecule	-
19041	C21orf29	NM_144991.2	201	aactggagatcagagatgattcag	289795		structural molecule	-
19042	CAV1	NM_007753.3	702	caatgcacaccgctgtctcttc	289819		structural molecule	-
19043	GLDN1	NM_021101.3	640	tgcatatgaatcctcgaapaat	289825		structural molecule	-
19044	GLDN10	NM_006984.3	649	atctctctctgcacaaagtatca	289846		structural molecule	-
19045	GLDN12	NM_012129.2	400	agcacactactgtgtactctca	289867		structural molecule	-
19046	GLDN14	NM_144492.1	1321	ctgccagcgcataatgttga	289876		structural molecule	-
19047	GLDN15	NM_014343.1	258	tcagtcctgtggaaccttgc	289879		structural molecule	-
19048	GLDN17	NM_012131.1	620	caataaacacaaagaatacaca	289899		structural molecule	-
19049	GLDN18	NM_016369.1	749	caagaacagagctacactctat	289912		structural molecule	Alzheimer disease(アルツハイマー病)
19050	GLDN19	NM_148960.1	808	ctctccctgacacattttttaa	289917		structural molecule	-
19051	GLDN2	NM_020384.2	890	gataatgcctccactactacag	289920		structural molecule	-

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19052	CLDN5	NM_003271.2	878	ctcctctctctccacattcttc	289923	-	structural molecule	Alzheimer disease(アルツハイマー病)
19053	CLDN6	NM_021165.3	669	ctctctctctccacacattcttc	289926	-	structural molecule	-
19054	CLDN7	NM_001307.3	530	atctctctctccacacattcttc	289927	-	structural molecule	-
19055	CLDN8	NM_011213.3	197	tctctctctctccacacattcttc	289936	-	structural molecule	-
19056	OLTC	NM_004859.1	2875	caatctctctctctccacattcttc	290042	-	structural molecule	inflammatory myofibroblastic tumors(炎症性筋肉線維芽細胞性腫瘍), inflammatory myofibroblastic tumor(炎症性筋肉線維芽細胞腫)
19057	COL21A1	NM_003020.2	396	tctctctctctctccacattcttc	290010	-	structural molecule	-
19058	COL21A1	NM_003020.2	1339	atctctctctctctccacattcttc	290119	-	structural molecule	-
19059	CTNND2	NM_001332.2	2668	ttctctctctctctccacattcttc	290235	-	structural molecule	-
19060	CTNND2	NM_001332.2	437	tctctctctctctccacattcttc	290235	-	structural molecule	-
19061	CTNND2	NM_001332.2	419	atctctctctctctccacattcttc	290267	-	structural molecule	-
19062	DRP2	NM_001939.1	1264	caatctctctctctccacattcttc	290290	-	structural molecule	-
19063	EVPL	NM_001968.1	1861	atctctctctctctccacattcttc	290316	-	structural molecule	-
19064	FLJ13646	NM_024364.2	185	acgtctctctctctccacattcttc	290324	-	structural molecule	-
19065	FLJ32214	NM_152473.1	965	ttctctctctctctccacattcttc	290358	-	structural molecule	-
19066	HSPG2	NM_005529.2	12335	caatctctctctctccacattcttc	290415	-	structural molecule	Schwartz-Jampel-Aberfeld syndrome(Schwartz-Jampel-Aberfeld症候群), Silverman-Handmaker type dyssegmental dysplasia(Silverman-Handmaker型軟骨形成不全症)
19067	HUMCYT2	NM_005529.2	12335	caatctctctctctccacattcttc	290415	-	structural molecule	-
19068	ITGBL1	NM_004791.1	1049	ttctctctctctctccacattcttc	290420	-	structural molecule	-
19069	ITGBL1	NM_004791.1	65	ttctctctctctctccacattcttc	290456	-	structural molecule	-
19070	K6HF	NM_004693.1	1611	ttctctctctctctccacattcttc	290471	-	structural molecule	-
19071	KRT12	NM_002231.1	1145	ttctctctctctctccacattcttc	290491	-	structural molecule	Meesmann corneal dystrophy(角膜ジストロフィ)
19072	KRT4	NM_002272.1	1324	ttctctctctctctccacattcttc	290499	-	structural molecule	-
19073	KRT7	NM_005556.2	137	ttctctctctctctccacattcttc	290505	-	structural molecule	-
19074	KRT17A7	NM_003770.3	1672	ttctctctctctctccacattcttc	290510	-	structural molecule	-
19075	KRT17B5	NM_002283.2	935	ttctctctctctctccacattcttc	290513	-	structural molecule	-
19076	KRT17B6	NM_002284.2	1309	ttctctctctctctccacattcttc	290514	-	structural molecule	-
19077	LAD1	NM_005558.3	1552	ttctctctctctctccacattcttc	290521	-	structural molecule	monilethrix(鎖珠毛)
19078	LAMA1	NM_005559.2	4352	ttctctctctctctccacattcttc	290591	-	structural molecule	-
19079	LAMA2	NM_000426.2	763	ttctctctctctctccacattcttc	290700	-	structural molecule	-
19080	LAMA3	NM_000272.2	185	ttctctctctctctccacattcttc	290937	-	structural molecule	-
19081	LAMB2	NM_002292.2	4326	ttctctctctctctccacattcttc	291296	-	structural molecule	epidermolysis bullosa(表皮水疱症)
19082	LAMB3	NM_000228.1	2736	ttctctctctctctccacattcttc	291333	-	structural molecule	-
19083	LAMB3	NM_002293.2	1357	ttctctctctctctccacattcttc	291361	-	structural molecule	-
19084	LAMB3	NM_006059.2	3993	ttctctctctctctccacattcttc	291449	-	structural molecule	-
19085	LAMB3	NM_153450.1	433	ttctctctctctctccacattcttc	291456	-	structural molecule	-
19086	LMBN1	NM_005573.2	762	ttctctctctctctccacattcttc	291460	-	structural molecule	-
19087	LOC12614	NM_145801.1	1263	ttctctctctctctccacattcttc	291500	-	structural molecule	-
19088	NAP1A	NM_002373.3	7003	ttctctctctctctccacattcttc	291570	-	structural molecule	-
19089	NAP1B	NM_005906.2	728	ttctctctctctctccacattcttc	291596	-	structural molecule	-

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19090	MAP4	NM_002315.2	3274	tggtctatgctcatcaacacac	291782	-	-	-	-
19091	MAP7	NM_03989.2	865	ctctacactgccaactcgaatg	291805	-	-	-	-
19092	MEP	NM_03989.2	441	gagcagagcgcgcacacacac	291833	-	-	-	structural molecule
19093	MEG10	NM_032446.1	2901	tgctgctgctcaactcgaatg	291878	-	-	-	-
19094	MEG26/706	NM_132381.1	579	tgctgctgctcaactcgaatg	291919	-	-	-	-
19095	MPZ	NM_000530.3	376	tggtctgctcatcacaacacac	291955	-	-	-	structural molecule
19096	MYOC	NM_002611.1	1359	atgctacgtctcaacttgcctat	291973	-	-	-	receptor activity
19097	NF2	NM_002688.2	512	acccgagatgagtgcaacttgc	291979	-	-	-	see also 225 line
19098	NMP200	NM_014502.3	866	ctcagctgagccacatgaaatg	292022	-	-	-	-
19099	NTN1	NM_048822.1	1116	acgaatctgctgctcctgaatg	292044	-	-	-	-
19100	NTN4	NM_021229.2	1369	ctctgcccctcttacaatgacc	292067	-	-	-	-
19101	NLIM1	NM_006185.1	5705	gcccacaactcactgctcaccg	292107	-	-	-	see also 4275 line
19102	ODF1	NM_024410.2	169	ctgaatctgctcagcaatgaa	292112	-	-	-	structural molecule
19103	ODF2	NM_024503.3	2200	caatgagagcctctgacaaga	292156	-	-	-	see also 1835 line
19104	OSF-2	NM_008475.1	769	ctctccacacatgagcaatg	292183	-	-	-	see also 4345 line
19105	PKP3	NM_007183.1	958	ggagctctgctgcttcaacagc	292243	-	-	-	see also 4885 line
19106	PKP4	NM_003828.2	3125	ggagctctgctgcttcaacagc	292258	-	-	-	structural molecule
19107	PLP1	NM_005533.2	524	tgagctcgggctgctgctctt	292355	-	-	-	see also 403 line
19108	PRPH	NM_005782.2	1259	cagcagcagcagcagcagcag	292404	-	-	-	structural molecule
19109	SPON2	NM_017445.1	895	aggacagcagcagcagcagcag	292405	-	-	-	-
19110	TEKT1	NM_052285.1	1094	gtctctgctctgcccacacata	292420	-	-	-	see also 9495 line
19111	TEKT2	NM_014865.2	848	gagcagcagcagcagcagcag	292437	-	-	-	see also 5597 line
19112	TEKT3	NM_031898.1	1311	aaagcagcagcagcagcagcag	292463	-	-	-	-
19113	THOC1	NM_006131.1	479	aagcagcagcagcagcagcag	292488	-	-	-	see also 3806 line
19114	UPK1B	NM_006952.2	573	ctctctcctgagcagcagcagc	292537	-	-	-	structural molecule
19115	USH2A	NM_007123.3	854	ctgagcagcagcagcagcagcag	292550	-	-	-	see also 4957 line
19116	VIL2	NM_003379.3	458	aggatcctcagcagcagcagc	292589	-	-	-	structural molecule
19117	PI15	NM_015886.1	1030	tggatgagcagcagcagcagc	292732	-	-	-	see also 6561 line
19118	ECG2	NM_032566.1	273	aactaatgagcagcagcagcag	292813	-	-	-	serine protease inhibitor
19119	FKSG28	NM_030929.3	843	cagatctgctcagcagcagcag	292814	-	-	-	-
19120	ITH2	NM_002216.1	2634	cagcagcagcagcagcagcag	292903	-	-	-	see also 1410 line
19121	ITH3	NM_002217.1	1258	ggagcagcagcagcagcagcag	292926	-	-	-	serine protease inhibitor
19122	ITH4	NM_002218.3	205	tgctcagcagcagcagcagcag	292943	-	-	-	serine protease inhibitor
19123	KRT6B3	NM_002282.2	82	tggtctcgcgcgcgcgcgcgc	292979	-	-	-	-

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19124	OL-64	NM_173850.2	1198	tergaacacjctgttcttacc	292985	-	-	-	-
19125	P2P	NM_002804.1	1437	gagcagatcagcgcacactaac	293038	-	-	wide-spectrum protease inhibitor	-
19126	RECK	NM_021111.1	2423	tcagctggacatcgactactag	293155	-	-	-	-
						-	see also 8086 line		
19127	SERPINA1	NM_000295.2	1148	agctgtgcagctctacttacc	293169	-	-	Hepatocyte nuclear factor 1	rheumatoid arthritis(関節リウマチ)、 atherosclerosis(粥状硬化症)、alpha-1- antitrypsin deficiency(アルファ1-アンチトリプシン 欠乏症)、emphysema(気腫)、hepatocellular carcinoma/cirrhosis(肝臓癌/肝臓病)
19128	SERPINA1	NM_016186.1	1713	tgagcagcacttacttactg	293191	-	-	-	-
19129	SERPINA1	NM_175739.2	614	aagtgcctctctctgcaagaag	293195	-	-	-	-
19130	SERPINA3	NM_001085.2	761	ttctcatcactgcactactccta	293208	-	-	-	atherosclerosis(粥状硬化症)、Alzheimer disease(アルツハイマー病)、Parkinson disease(パーキンソン病)
19131	SERPINA1	NM_003686.2	487	ttcctctgcagctgatttataac	293225	-	-	-	-
19132	SERPINA1	NM_080475.1	767	ctgacttgcagctgacttactg	293272	-	-	-	-
19133	SERPINA1	NM_012397.2	1071	ctgacttgcagctgacttactg	293297	-	-	-	-
19134	SERPINA3	NM_008919.1	509	ttctgttgagatgcacagatgata	293317	-	-	-	-
19135	SERPINA3	NM_002639.1	343	agtcgctgcctgcctgcacactc	293337	-	-	-	-
19136	SERPINA7	NM_003784.1	743	gagctgacttacttacttgcatac	293373	-	-	-	-
19137	SERPINF1	NM_002615.3	449	cagcagacagatcacttacttca	293400	-	-	-	-
19138	SERPINF2	NM_000934.1	1030	ctgcctcagctgctatctgaaca	293422	-	-	serpin	plasmin inhibitor deficiency(プラスミンインヘビ ター欠乏症)
19139	SERPINA1	NM_000062.1	109	ggagcttgagctgcctctcaatctc	293424	-	-	-	hereditary angioneurotic edema(遺伝性血管神経 性浮腫)、partial deficiency of complement component 4(補体第4成分欠損症)
19140	SERPINA1	NM_005025.1	1096	agctgctctctcagctgacttata	293455	-	-	-	-
19141	SERPINA2	NM_003217.2	946	ttgacatacagcagatgtatag	293476	-	-	-	-
19142	SUPI	NM_003064.2	291	caatgcactatgctgcaactgttg	293489	-	-	serine protease inhibitor	-
19143	SPINK1	NM_003122.1	103	ttctgctctctctgctacactag	293494	-	-	transition inhibitor	-
19144	SPINK2	NM_021114.1	275	cagcagagagctgctactactcta	293505	-	-	serine protease inhibitor	-
19145	SPINK4	NM_014471.1	178	ctgctgctgctcactctcagat	293507	-	-	-	-
19146	SPINK5	NM_020398.1	2235	ctgctgccaactgcacacactac	293543	-	-	-	-
19147	SPINKL1	NM_020398.2	185	cgacacactgcgcgacacacaga	293567	-	-	-	-
19148	SPINT1	NM_003710.2	1025	cagatctgcagagtgcttgctta	293577	-	-	-	-
						-	see also 2534 line	-	-
19149	SPINT2	NM_021102.1	609	cagcagatacttactcactgaag	293583	-	-	serine protease inhibitor	-
19150	UNC9B	NM_060878.1	1538	gagctccacagcagactatcctg	293625	-	-	-	-
19151	WFDG1C	NM_060753.2	239	ccgagatgtgcagcagactaaca	293647	-	-	-	-
19152	WFDG1C	NM_060689.1	84	aggaagttaagagaggtataga	293648	-	-	-	-
						-	see also 9533 line	-	-

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19153	WFD03	742	atgaatctctctccaaataga	293664	-	-	-
19154	WFD08	80	atgaatctctccaaataga	293667	-	-	-
19155	AHSG	175	atgaatctctccaaataga	293667	-	kinase related, signal transduction	-
19156	BIRC4	301	agagacacgctggctcttga	293703	-	apoptosis	-
19157	BIRC5	290	tcctcagcttgcctctcttc	293740	-	apoptosis, cell cycle	-
19158	CAST	1029	gactcagctcctgcctcaataa	293780	-	-	-
19159	GST11	230	agactcttcgactcctcaatga	293794	-	-	-
19160	GST5	245	ggagtgactcctcctcaatga	293801	-	-	-
19161	GST7	506	gggctcctgctcagctagtaga	293812	-	-	-
19162	GST8	534	gactcagctcctcagctagtaga	293815	-	-	-
19163	GST9L	446	caagctcagctcagctcctga	293823	-	-	-
19164	GSTA	203	ctgagacacaaatctcctcaag	293826	-	-	-
19165	GSTB	255	cgagacacaaatctcctcaag	293831	-	-	-
19166	KNG	1258	gactcagctcctcagctagtaga	293871	-	-	-
19167	TIMP2	503	gagctcagctcctcagctagtaga	293879	-	-	-
19168	TIMP4	267	agctcagctcctcagctagtaga	293884	-	-	-
19169	C4A	2792	tgctcagctcctcagctagtaga	293977	-	-	-
19170	CD109	894	gagctcagctcctcagctagtaga	293977	-	-	-
19171	FLJ25179	314	atgagctcagctcctcagctagtaga	294036	-	-	-
19172	SPP2	53	ttgctcctcagctcctcagctagtaga	294039	-	-	-
19173	YIP	4835	tgagctcagctcctcagctagtaga	294077	-	-	-
19174	DEFB126	96	ttctcagctcctcagctagtaga	294088	-	-	-
19175	CDKN1C	314	tgagctcctcagctcctcagctagtaga	294096	-	-	-
19176	CDKN2C	1392	gagctcagctcctcagctagtaga	294107	-	-	-
19177	PKIA	885	agagctcagctcctcagctagtaga	294118	-	-	-
19178	DNAJC3	487	atcagctcctcagctcctcagctagtaga	294136	-	-	-
19179	MBIP	135	ccgagctcctcagctcctcagctagtaga	294174	-	-	-

Hepatocellular carcinoma(肝癌), colorectal cancer(大腸癌), non-hodgkin lymphoma(非ホジキンリンパ腫), breast cancer(乳癌), lung cancer(肺癌), neuroblastoma(神経芽細胞腫), melanoma(メラノーマ), colorectal cancers(結腸癌), Alzheimer disease(アルツハイマー病)

hepatocellular carcinoma(肝癌), Beckwith-Wiedemann syndrome(ベックウィス・ウィーデマン症候群), Ewing's sarcoma(ユースキンガ肉腫)

myoclonic epilepsy(ミオクローヌス痙攣), total kininogen deficiency(トータルキニノーゲン欠乏症)

systemic lupus erythematosus(全身性エリテマトーデス)

hepatocellular carcinoma(肝癌), Beckwith-Wiedemann syndrome(ベックウィス・ウィーデマン症候群), Ewing's sarcoma(ユースキンガ肉腫)

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19180	PPP1R1B	NM_032192.2	1011	ttgagagaccacgaactaactga	294199	kinase related, phosphatase, signal transduction	-	-
19181	SOCS1	NM_003745.1	375	ttgacacgttccgaattcactagg	294200	kinase related	protein kinase inhibitor	-
19182	PPP1R1A	NM_000741.2	398	aaagatcaaccacacaaatgaag	294205	see also 4763 line	-	-
19183	C7orf16	NM_006688.2	176	ttgtttgacgaactgatgatctc	294208	phosphatase, signal transduction kinase related	protein phosphatase inhibitor	-
19184	CABIN1	NM_012295.2	4191	ttgacacgattctcctaattgt	294266	phosphatase, signal transduction	protein phosphatase	-
19185	-4	NM_025210.1	324	cgcgcacgactcagaatgaag	294291	phosphatase	-	-
19186	ANP32E	NM_030920.2	865	ttgtccacccgaagatgaag	294315	see also 8963 line	-	-
19187	SNCB	NM_003085.2	355	agggaggaattctctactgatct	294319	-	phospholipase inhibitor	Parkinson disease(パーキンソン病)
19188	GFS1	NM_004127.3	1189	acgtttcagccgacatgcatagg	294329	cell cycle, kinase related	GTase inhibitor ornithine decarboxylase inhibitor	-
19189	OAZ1	NM_004152.2	447	cagacgcacaaagcattaaactgg	294402	-	-	-
19190	PSMF1	NM_006814.2	368	atctctcctcgtatgataaag	294411	-	-	-
19191	RNH	NM_002939.2	2703	ttgtctctaaagcattactagg	294418	-	ribonuclease inhibitor	-
19192	ARRB1	NM_004041.2	1105	gagacgcacgaatgatacaactct	294431	gpcr, signal transduction	-	-
19193	ATP1F1	NM_016311.3	238	cagctctgaagagagagatatt	294435	-	enzyme inhibitor	-
19194	NP1	NM_00207.1	5708	ctctctcctcgtactactaa	294536	see also 211 line	-	-
19195	ALS3	NM_020919.2	4177	atgtctcctcgtactactaaagc	294766	see also 8023 line	-	-
19196	ARHGEF3	NM_019555.1	256	cgcactcactcgtctgataaacc	294784	signal transduction	-	-
19197	ARHGEF4	NM_015320.2	2131	cgcagacagcttctgactcaaacg	294826	-	-	-
19198	ARHGEF6	NM_004840.1	1427	ggagacagcttactctatttatt	294862	see also 3355 line	-	-
19199	FARP1	NM_005766.1	903	ttatctgcacagagataactagg	294911	-	-	-
19200	FBX08	NM_012180.1	367	ctcgcagacacattctcaaaccc	294945	see also 5182 line	guanyl-nucleotide release factor	-
19201	GFI1	NM_004193.1	2913	agccttgcttggagagactagg	295043	-	-	-
19202	PSCD1	NM_004762.1	757	gagctctcctcggaactctctatga	295086	-	-	-
19203	PSCD2	NM_004228.3	1280	gagcttggacccctctatgaga	295098	-	-	-
19204	PSCD4	NM_013395.2	1079	gagccacaggggaattatcctct	295108	-	guanyl-nucleotide release factor	-
19205	RASBP2L	NM_004761.2	1698	acgctgctctctcgcacaaattgg	295129	signal transduction	-	-
19206	RASGRF1	NM_002891.3	2667	ctctctctgaactcgcacaaacc	295167	see also 1929 line	-	-
19207	DELGEF	NM_012139.2	612	ggacacttttgaactctatgg	295191	-	-	-
19208	WBSORF16	NM_030798.2	438	cagcagagattcttgaagctctgg	295201	-	-	-

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19209	RIN2	NM_018993.2	2658	acgctcaataaagcgtctctatg	295249	-	see also 7644 line	-	-
19210	RGL	NM_015149.2	2434	ctctctcgtctacgtctctatcc	295292	-	signal transduction	guanyl-nucleotide release factor	-
19211	ABR	NM_001092.3	459	agagctctttctgatactctatga	295303	-	signal transduction	-	medulloblastoma(髄芽腫)
19212	ARRGEF2	NM_008420.1	2309	agctcttgctctatctcaattctt	295363	-	-	-	-
19213	ARRGEF1	NM_003895.2	1369	gaatcagctctgagcagatag	239461	-	see also 2656 line	-	-
19214	BCAR3	NM_003567.1	1926	copagctggccactctgataaga	295508	-	cell cycle, signal transduction	-	breast cancer(乳癌)
19215	BIG1	NM_006421.2	3327	tggagtgaaactctgctatcattt	295600	-	-	guanyl-nucleotide release factor	-
19216	ECI2	NM_018098.4	626	atgctgctgctactctcaattat	295684	-	see also 7254 line	-	-
19217	FLJ10244	NM_018037.1	420	atgctgctgctatgaatacattg	295773	-	see also 7215 line	-	-
19218	GP1G4	NM_152545.1	293	tattctcctaatgttgattactat	295832	-	-	-	-
19219	HAP1P	NM_003947.1	322	gcggaactctgactgattttag	295878	-	signal transduction	guanyl-nucleotide release factor	-
19220	KIA1010	NM_015221.1	741	tgggtgctcctctacagattcc	295945	-	-	-	-
19221	Link-GEF1	NM_016339.1	1132	agaacacttttgcgaatttga	296053	-	signal transduction	-	-
19222	LOC221100	NM_145313.1	639	ccctgcacacccctctgacaaag	296062	-	-	-	-
19223	MGF2	NM_005362.2	1068	gaattgctgaatgactactctacc	296102	-	see also 3742 line	-	-
19224	MCF2L	NM_024979.2	327	agcagaagaacccgcttatacc	296157	-	-	guanyl-nucleotide release factor	-
19225	NET1	NM_005963.2	917	tctaactgctactcaattacc	296217	-	-	-	-
19226	PDZGEF1	NM_011424.1	3762	tgatgctgctgctcctctctgac	296329	-	-	-	-
19227	PDZGEF2	NM_016340.1	667	gaagcgaacacatctactctgga	296370	-	see also 6823 line	-	-
19228	RALGDS	NM_006286.1	315	tgcttgctgctgaacctctatga	238458	-	see also 4357 line	-	-
19229	RALGAP1	NM_014636.1	1837	cagctgctgtccgctattcagc	296493	-	see also 3810 line	-	-
19230	RASGRP2	NM_006909.1	2762	agacgcgcacagcttatacattg	296592	-	see also 4847 line	-	-
19231	Rgr	NM_153615.1	1559	ctgggaacacgcgtattacattg	296620	-	signal transduction	-	-
19232	SOS2	NM_006939.1	3805	aggttaccgctgctgctctatgt	296727	-	-	-	-
19233	GRAF	NM_015071.2	2368	caatcagaacagctctgataa	296770	-	-	-	-
19234	MIG-6	NM_018946.2	1566	aactcttaaacattatctatgt	296820	-	-	-	-
19235	OPHN1	NM_020547.1	760	agcagcgaacgcgcttatacgc	296822	-	see also 1641 line	-	-
19236	PARG1	NM_004815.2	3309	tgcctgtgatactactctctct	296965	-	see also 3345 line	-	-
19237	IQGAP3	NM_178229.3	4399	gtgaacctaacgcgctctgaagc	297030	-	-	-	-
19238	RASA1	NM_002890.1	2238	cttttcagtcacgactactctg	297093	-	see also 1924 line	-	-
19239	RASA2	NM_006506.2	1360	gaatactcgtcactactataga	297178	-	see also 4550 line	-	-
19240	RASA2L	NM_004841.2	587	caatgacagttaaacctantaaag	297227	-	signal transduction	-	-
19241	ARHGDB	NM_001175.1	556	aatttgataagcaacattttag	297304	-	signal transduction	Rho GDP-dissociation inhibitor	-
19242	ARHGDG	NM_001176.1	467	agttccagaggagatttgcaagc	297310	-	signal transduction	Rho GDP-dissociation inhibitor	-

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19243	GD2	NM_001494.2	681	ttggttcaagcgttatagatt	297321	-	-	RAB GTPase activator	-
19244	GD11	NM_001493.1	694	ccttcaacgcgtcaactatgac	297360	-	signal transduction	RAB GTPase activator	mental retardation(精神遅滞)
19245	RIN3	NM_024832.3	2612	ggagcagcgttctactatctga	297442	-	see also 8771 line	-	-
19246	RANGAP1	NM_002983.2	829	caaaacgcgtctggagacatg	297449	-	signal transduction	RAN GTPase activator	-
19247	SIPAL1	NM_067474.2	797	cttgcctacgcgtcaactctc	297451	-	apoptosis	-	-
19248	BART1	NM_021708.2	419	agaagtgccggtgcacatctc	297468	-	signal transduction	-	-
19249	CCM1	NM_004912.3	1983	ttgggcgcactgcctatgctga	297500	-	see also 3413 line	-	-
19250	DKFZ5761	NM_032293.3	2388	gtgcctccacgctgcgtatgata	297602	-	see also 9145 line	-	-
19251	MINK	NM_015716.2	2154	cttgcctgcgcgcgttaacagag	297630	-	signal transduction	-	-
19252	RPIP8	NM_006865.3	685	cggaacacacgcgttctctaga	297644	-	-	-	-
19253	WAS	NM_000377.1	728	aagatcaagcaaacgtctgattg	297651	-	-	small GTPase regulatory/interact- ing protein	rheumatoid arthritis(関節リウマチ), eczema- thrombocytopenia-immunodeficiency syndrome(血小板減少症), Wiskott-Aldrich syndrome(ウィスコット-アルドリッヂ症候群), thrombocytopenia(血小板減少症)
19254	BNIP2	NM_004330.1	589	tgaacagcgttgcgtatgctga	297687	-	apoptosis	-	-
19255	DOCK1	NM_001380.1	5202	gtgatctcttgcgaacgataag	297921	-	signal transduction	-	-
19256	LGN	NM_013296.3	1060	cttttgcgcgcagcgtctaaag	297956	-	see also 5369 line	-	-
19257	RAB3-	NM_012414.2	1343	ggttcaacgcgcacacaaattg	298038	-	-	-	-
19258	RALBP1	NM_006788.2	1323	cttcaagctggtgataaagattg	298119	-	signal transduction	-	-
19259	RAP1G1	NM_002885.1	603	gttccagacactccctgactcca	298138	-	signal transduction	GTPase activator	-
19260	RAP1GDS	NM_021159.3	1502	ctctctacccctcttcaacgca	298194	-	see also 8111 line	-	-
19261	PASA3	NM_007688.2	1146	ctctgctctctctcaactatg	298217	-	see also 5094 line	-	-
19262	SH3BP1	NM_018957.2	563	agactctctctgctcaactctc	298271	-	-	GTPase activator	-
19263	SRGAP2	NM_014850.1	2694	tggcgcgcgcgcgtcagcgtct	298277	-	see also 6050 line	-	-
19264	STARH1	NM_052851.1	2384	gggtcgtgcgtgcagctgctg	298319	-	-	-	-
19265	STARH2	NM_014725.2	1408	aggccacactcactcagagaata	298333	-	see also 5915 line	-	-
19266	TBC1D2	NM_018421.1	1903	gagccacactcagtaagatg	298346	-	-	-	-
19267	TSC2	NM_000548.2	582	cttttactcctgcagctgactcg	298360	-	-	-	leiomyoma(血管筋腫), tuberous sclerosis(結節 性硬化症), renal cell carcinoma(腎細胞癌), familial nervous system tumor syndromes(家族 性神経系腫瘍症候群)
19268	BCL2L13	NM_015367.1	669	gagcaacactctcaactctga	298407	-	cell cycle	-	-
19269	PSME1	NM_006263.2	665	cagcccaactcttgcgttatctg	298422	-	apoptosis	protein translocase	-
19270	PSME3	NM_005789.2	335	aagttatagaacttgatgattg	298428	-	-	-	-
19271	PPP2R4	NM_021131.3	863	ggagcgttcgactcgtatgagac	298457	-	-	phosphatase	-
19272	PLAA	NM_004253.2	718	tgttgcagctggtgcattatga	298485	-	see also 2857 line	-	-
19273	GWA2	NM_000405.3	573	cttcccaagcgcagcttgattgt	298552	-	see also 322 line	-	-

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19307	DNAJB11	NM_016306.3	744	atgcctcaatctcaactgata	299395	-	see also 6801 line	-	-
19308	DNAJB12	NM_017628.1	338	aggtcaactcaactgaagata	299411	-	-	-	chaperone
19309	DNAJB8	NM_153330.1	338	tcctttcccccacacacacac	299413	-	-	-	-
19310	DNAJB9	NM_012328.1	832	aggaatctgctctctctctctca	299432	-	-	-	chaperone
19311	DNAJC4	NM_005526.1	1135	aggaatctgctctctctctctca	299438	-	-	-	heat shock protein
19312	DNAJC8	NM_014280.1	265	aggtcttgctctctctctctctct	299438	-	-	-	-
19313	HR23	NM_014280.2	295	aggtcttgctctctctctctctct	299453	-	-	-	chaperone
19314	JDP1	NM_021800.1	494	aggaatctgctctctctctctctct	299460	-	-	-	-
19315	MGCB2828	NM_033105.3	516	aggaatctgctctctctctctctct	299472	-	-	-	chaperone
19316	PF2D2	NM_012394.2	192	caagctctgctctctctctctctca	299475	-	-	-	chaperone
19317	SCAP	NM_012235.1	1381	tggaagctctctctctctctctcaag	299482	-	-	-	transcription_regulat
19318	SCO1	NM_004589.1	343	tggaatctgctctctctctctcaag	299483	-	-	-	or
19319	SIL1	NM_022464.3	641	aaatgctctctctctctctctctct	299518	-	-	-	chaperone
19320	WBSOR18	NM_032317.2	166	gcctcaagctctctctctctctctct	299529	-	-	-	-
19321	APPBP2	NM_006380.2	1924	tgctcaagctctctctctctctctct	299558	-	-	-	see also 4473 line
19322	Dic2	NM_080677.1	343	aggtcttgctctctctctctctctct	299581	-	-	-	-
19323	DNAL4	NM_005740.1	337	aggtcttgctctctctctctctctct	299583	-	-	-	-
19324	DNC2	NM_001378.1	1042	gcctctctctctctctctctctctct	299605	-	-	-	microtubule motor
19325	FLJ32752	NM_144666.1	2757	tggaatctctctctctctctctctct	299652	-	-	-	-
19326	FLJ40427	NM_178504.3	342	tggaatctctctctctctctctctct	299660	-	-	-	-
19327	KL2	NM_022822.1	1761	tggaatctctctctctctctctctct	299772	-	-	-	-
19328	KNS2	NM_005552.3	1158	gcctcaagctctctctctctctctct	299768	-	-	-	-
19329	KNSL8	NM_138343.1	840	tggtctctctctctctctctctctct	299809	-	-	-	-
19330	DCTN1	NM_004082.2	2628	ttctctcaagctctctctctctctct	299821	-	-	-	lower motor neuron disease(下位運動ニューロ
19331	DCTN2	NM_006400.3	850	tggaatctctctctctctctctctct	299854	-	-	-	症)
19332	DNAI1	NM_012144.2	854	caagctctctctctctctctctctct	299852	-	-	-	motor
19333	DNAI2	NM_023036.1	862	aggtcttgctctctctctctctctct	299855	-	-	-	motor
19334	DNAL1	NM_003482.3	156	aggtcttgctctctctctctctctct	299903	-	-	-	axonal motor
19335	GIAO1	NM_004804.2	450	atgctctcaactctctctctctctct	299942	-	-	-	transcription_regulat
19336	ID1	NM_002165.2	299	acatctcaagctctctctctctctct	299950	-	-	-	or
19337	RBFB8	NM_002894.1	1559	aggaatcttgctctctctctctctct	299984	-	-	-	transcription_regulat
19338	SMARCB1	NM_003073.2	243	aggaatctctctctctctctctctct	300020	-	-	-	or
19339	THRSP	NM_003251.1	415	caagaaatgctctctctctctctctct	300032	-	-	-	see also 2060 line
19340	RPC32	NM_006467.1	554	aaagcacacctctctctctctctct	300042	-	-	-	transcription_regulat
19341	RPC62	NM_006468.4	412	aggtctctctctctctctctctctct	300054	-	-	-	or

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19342	AES	NM_001130.5	517	ccctcccgccgagcgaactctatc	300099	-	signal_transduction	-
19343	ASXL1	NM_015338.3	3855	tcctctccgctcgaggctctttacc	300164	-	transcription_regulat or	-
19344	BCL3	NM_005178.2	919	acgtgaagcgaagaatgactcc	300187	-	cell_cycle, transcription_regulat or	leukemia(白血病), chronic lymphocytic leukaemia(慢性リンパ球性白血病)
19345	BM1	NM_005180.5	689	aaacacagacacctctctgaatct	300193	-	transcription_regulat or	-
19346	CCNC	NM_005190.2	279	ctctacgtgtattctttcaagaga	300220	-	transcription_regulat or	-
19347	CCNH	NM_001239.2	468	ttgtgactgcctctgtatgtat	300242	-	see also 3648 line	-
19348	CCNT1	NM_001240.2	2095	ttgtccaaagactaaactctct	300309	-	cell_cycle, transcription_regulat or, kinase related regulator	-
19349	CCNT2	NM_001241.2	961	ctctccgactaccttaaatcca	300351	-	transcription_regulat or, kinase related	-
19350	DAT1	NM_018640.2	827	cgactacagaggaagttaattg	300386	-	transcription_regulat or	-
19351	DAXX	NM_001350.2	1090	ggcaactcaactcgctctctct	300393	-	apoptosis, transcription_regulat or	-
19352	FLJ10201	NM_018023.3	1664	ctctccgactctgtatttaataat	300451	-	transcription_regulat or	-
19353	GT2H2	NM_001515.2	432	tcgaactgcgctgactttaaagt	300501	-	transcription_regulat translation factor, nucleic acid binding	-
19354	JAZF1	NM_175061.2	693	ctctggcaccacacaaactcaatt	300511	-	transcription_regulat or	-
19355	JJAZ1	NM_015355.1	1736	taattgcgaagccagcttaaga	300541	-	see also 6386 line	-
19356	MADH9	NM_005905.2	846	ttgtctctgtctgctactataga	300560	-	transcription_regulat or	-
19357	MJD	NM_004993.2	358	gaagctcagatgcctctctataa	300588	-	see also 3484 line	-
19358	MLL73	NM_004529.1	1246	acgttaaccgacttgatgatgat	300641	-	see also 3082 line	-
19359	NCOA5	NM_020967.1	704	atctccgaagcccttgatgtgt	300683	-	transcription_regulat or	-
19360	PCQAP	NM_015889.2	701	caactctctaataattgactacca	300708	-	transcription_regulat translation regulator	-
19361	RBL1	NM_002895.2	2478	gttaagctctactgtctatgtgt	300785	-	see also 1930 line	-
19362	SEI1	NM_013376.1	643	ggactctgtttgaagattatgaca	300809	-	transcription_regulat or, cell cycle, kinase related	-
19363	SIN3A	NM_015471.1	2492	ggcttcbaagactactcaatgaa	300868	-	see also 6425 line	-
19364	SNAPC1	NM_003082.2	852	gaagctatgcctcagcgaacatcgc	300912	-	see also 2075 line	-

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19365	TLE1	NM_005077.3	1170	aagcgcagcgaactctgtctg	300918	-	signal_transduction	-
19366	TLE2	NM_003960.3	316	atgctcagcgcctcaactga	300934	-	transcription_regulat	-
19367	TRIP-BP2	NM_014755.1	827	aaagcctcgcgcacatctccc	300971	-	transcription_regulat	-
19368	TRIP8	NM_004241.1	6018	tggcgcagctatgcctaaccttc	301140	-	transcription_regulat	-
19369	HSP2BP	NM_007031.1	592	cccttcagcgcgcacacataaga	301183	-	transcription_regulat	-
19370	FLJ25348	NM_144569.2	946	tgtgtgaccctcagctctcagtg	301210	-	transcription_regulat	-
19371	PWP1	NM_007062.1	1500	aapcgcagcagcgtgtgtcttg	301250	-	transcription_regulat	signal_transducer
19372	NASP	NM_002482.2	2030	agaaactcagcgcgaactgaaga	301281	-	transcription_regulat	-
19373	XRCG4	NM_003401.2	800	ccgaatcagctctcagctgaga	301299	-	transcription_regulat	-
19374	ALKBH	NM_006020.1	509	ctaccctcagcgcacattataga	301309	-	transcription_regulat	-
19375	FANCA	NM_000135.1	281	gagccctcagctcattcattctcag	301321	-	transcription_regulat	-
19376	FANCC	NM_000136.1	669	tgggttcagcctatagatgaact	301401	-	transcription_regulat	-
19377	FLJ10858	NM_018248.1	951	aagctaccgcctcaggaatactat	301448	-	transcription_regulat	-
19378	HUS1	NM_004507.2	933	aagcctctctcctcagctatcttc	301508	-	transcription_regulat	-
19379	NEL2	NM_145043.1	1007	ccggtctctctcagcgtctctat	301518	-	transcription_regulat	-
19380	POLK	NM_016216.1	1697	atgggtctcagctatcctctctt	301577	-	transcription_regulat	-
19381	RAO9A	NM_004584.2	992	atagcagcattgcctctcacttg	301624	-	transcription_regulat	-
19382	RBBP4	NM_005610.1	1097	ctatcgcagcagcagatgtctcgg	301635	-	transcription_regulat	-
19383	ODC45L	NM_003504.3	384	cagctaaagctcagctcaattatag	301647	-	transcription_regulat	-
19384	GMN1	NM_015895.2	562	agagctcattctcctctatgatt	301676	-	transcription_regulat	-
19385	SPHAR	NM_006542.1	387	atctctcattatagatgattg	301689	-	transcription_regulat	-
19386	REC8L1	NM_005132.1	656	ttctctcctctctattctcaaca	301692	-	transcription_regulat	-
19387	CIDEA	NM_001279.2	394	gagatctcactctgactctgaga	301708	-	transcription_regulat	apoptosis, signal_transduction
19388	ODC40	NM_015891.2	809	gtcttaattcagctctgaactctg	301742	-	transcription_regulat	protein_tyr_kinase
19389	CRNK1	NM_016652.3	809	aagcctcagctcctcattatgagac	301763	-	transcription_regulat	-
19390	GEMIN4	NM_015721.1	2294	ctgctccagccagctgtgagac	301868	-	transcription_regulat	-
19391	ARL6P4	NM_016638.1	621	gagaaatctcagcaacagagagc	301876	-	transcription_regulat	-
19392	LUC7A	NM_016424.2	1215	aagccagctcagcaatcagatata	301910	-	transcription_regulat	-
19393	FLJ21172	NM_024065.1	664	gtccacagcagctatgtcttcca	301924	-	transcription_regulat	-
19394	FNUSP2	NM_004704.2	579	tggcagagagctcagctcagcttc	301938	-	transcription_regulat	-

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19437	PTDSS2	NM_030783.1	1262	ccctgaagctacagctcatg	303092	-	see also 8946 line	-
19438	ELOVL1	NM_022821.1	868	ctgtatcaactatatacaagg	303109	-	-	-
19439	ELOVL3	NM_152310.1	617	ctctctctgtatacaagcttgg	303121	-	-	-
19440	PRKAB1	NM_006253.4	547	gggtatcaagaagagttctctat	303132	-	signal transduction	-
19441	C1orf17	NM_015101.1	745	ggtctatccctggtgaatttgg	303142	-	see also 6241 line	hydrolyzing O-glycosyl
19442	CECCAM1	NM_018174.3	957	atctgaagctgacctctctcagg	303171	-	-	-
19443	FLJ22329	NM_024658.2	598	ggctctgtctatccactctctgg	303178	-	see also 8879 line	-
19444	COQ7	NM_016138.3	195	ctggcaagctgtgtatcgaataa	303193	-	-	-
19445	COQ4	NM_016035.1	621	agggaagctgcctggattctgaca	303208	-	-	-
19446	MATP	NM_016180.2	497	atctatgagctgtctctcttga	303217	-	-	-
19447	SILV	NM_006928.2	1333	atctctgcgaagatgtctcaagg	303251	-	see also 4859 line	-
19448	FLJ31978	NM_144669.1	416	catctgagctgcacggttttacc	303266	-	-	-
19449	MGC35274	NM_153374.1	1121	atctcaactctctctctcaactg	303282	-	-	-
19450	NCOA7	NM_181782.1	396	ggatctcagctgtccagcaactaaa	303288	-	see also 10253 line	-
19451	OSBP2	NM_030758.1	527	aggatcgtctccagcgttaaaag	303360	-	-	-
19452	OSBP1.0	NM_017784.3	1561	ggagctcagctgtgtatcaattct	303400	-	-	-
19453	OSBP1.1	NM_022776.3	1952	ctggaaagctgtctctgtctgt	303464	-	see also 7152 line	-
19454	OSBP1.2	NM_014835.2	252	aaatcagcgaagatgttgactta	303481	-	see also 8468 line	-
19455	OSBP1.3	NM_015550.2	949	aggcaagctgtcagatatacaaa	303512	-	see also 6043 line	-
19456	OSBP1.6	NM_032523.2	904	ctcgaacatcagctgtttatag	303563	-	see also 9237 line	-
19457	OSBP1.7	NM_017731.3	2707	ctgtgtctcaacaaactatcaact	303669	-	-	-
19458	OSBP1.8	NM_020841.3	2544	acggttaactctgagcactaaatg	303741	-	see also 7888 line	-
19459	ASAH2	NM_019893.1	1652	caagctctatgaagctctataga	303868	-	see also 7751 line	-
19460	SFTPB	NM_000542.2	649	aagcagctcaacagcactggttcc	303876	-	translation regulator	congenital alveolar proteinosis (先天性肺蛋白症), pulmonary alveolar proteinosis (肺蛋白症)
19461	BTN3A1	NM_007046.3	1319	ggatcagctcagctctatgtatgt	303879	-	-	-
19462	OLU	NM_001439.1	161	agctgaagctgtccatgaagaaa	303887	-	apoptosis	atherosclerosis (粥状硬化症), Alzheimer disease (アルツハイマー病)
19463	CYB5-M	NM_030579.1	384	aaattcttgacctatctgtgattt	303908	-	see also 8892 line	-
19464	CYBRO1	NM_021843.2	196	tggaagctcagctgagtttaact	303912	-	-	-
19465	FLJ20296	NM_017750.2	332	ggagctctctctatcactcttgg	303930	-	-	-
19466	FLJ23153	NM_024636.1	754	tggtctataagagctgaattct	303963	-	-	-
19467	FLJ39035	NM_182580.1	287	ctcaaacatctctctctctcttc	303974	-	transcription regulator	-
19468	KIAA0601	NM_015013.1	1891	ccgctctcagatgcaaacctctta	304018	-	or	-
19469	MGC20446	NM_153611.2	474	tgctgtctgtgagcttctacttg	304042	-	-	-
19470	MGC25181	NM_152783.2	559	tgcaagctccctctgttgaag	304051	-	-	-
19471	PAOX	NM_152911.1	760	gggtctcaagagctcacaact	304057	-	-	-
19472	PCM1	NM_006197.2	5799	agctctctcaagctgactttaaa	304251	-	see also 4290 line	-
19473	SRPUL	NM_014467.1	1467	ctgctctctcaaacagatattat	304291	-	see also 5698 line	-
19474	STEAP2	NM_152989.2	506	ttcaactcagctctcttcttg	304302	-	-	-
19475	TSAP6	NM_018234.1	1393	aggagacacctcgaagtctctac	304347	-	-	-

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19476	FLJ10986	NM_018291.2	1384	tttgagagctgcgttcattataga	304387	-	-
19477	KIAA1838	NM_032448.1	2123	cagggaggaacgcctcgtttgaaa	304414	-	-
19478	MGC0579	NM_152776.1	804	tttgatcttcttccttcatt	304446	-	-
19479	KIAA0992	NM_016081.2	2794	tttatctgagcgcctaaagctac	304516	-	-
19480	WFS1	NM_008005.2	234	caagcgcgttcctgcactcaatgc	304537	-	deafness(聴), diabetes mellitus(糖尿病), diabetes(糖尿病), Wolfman syndrome(ウルフマン症候群)
19481	COT16	NM_021146.2	1018	acagcgcgttcctgcactcaatgc	304560	-	-
19482	POL1	NM_004923.2	1129	ttccaacacttgcactcaatgc	304573	-	heavy metal
19483	POLIM1	NM_020992.2	846	aactcctgccttcactcaatgc	304591	-	apoptosis
19484	CAMP	NM_004345.3	593	aagatcttccatcaaatcaatgc	304602	-	antibacterial
19485	DEFA1	NM_004084.2	304	caagagcaactccttcactcaatgc	304606	-	antifungal peptide
19486	DEFA5	NM_021010.1	186	atgacactccttccttcactcaatgc	304607	-	antifungal peptide
19487	DEFA6	NM_001926.2	302	ctgcacgccttccttcactcaatgc	304614	-	antimicrobial peptide
19488	DEFB1	NM_005218.2	155	tggcacaagctccttcactcaatgc	304617	-	signal transduction , gpr
19489	DEFB103	NM_018681.2	221	ggagcgccttcactccttccttttg	304618	-	Gram-positive antibacterial
19490	DEFB104	NM_000389.1	202	atgagcgccttcactccttccttttg	304634	-	-
19491	DEFB106	NM_152921.2	177	cagccacttccttcactccttccttttg	304638	-	-
19492	DEFB118	NM_054112.1	188	ctgccttccttcactccttccttttg	304642	-	-
19493	DEFB123	NM_153324.2	213	gagctctcttccttcactccttccttttg	304655	-	-
19494	DEFB125	NM_153325.1	34	cagctgcacaaagcttccttccttttg	304657	-	-
19495	DEFB127	NM_138074.2	47	caatcaacgcacacacttccttccttttg	304672	-	-
19496	DEFB129	NM_060893.2	71	tgccttcgcagcgccttccttccttttg	304678	-	-
19497	GNLY	NM_006433.2	435	tgccttcgcacgccttccttccttttg	304693	-	-
19498	HTN1	NM_002159.2	113	atctatgagccttccttcactcaatgc	304703	-	antifungal peptide
19499	HTN3	NM_000200.1	191	tgcagcttcacttccttcactcaatgc	304707	-	antifungal peptide
19500	LEAP-2	NM_052971.1	1537	ggagatcttccttcacttcactcaatgc	304703	-	-
19501	C7orf10	NM_024728.1	1089	agagtcacagcagcgccttcactcaatgc	304743	-	see also 8717 line
19502	INSIG1	NM_005542.3	932	ggagatcttcacttcacttcactcaatgc	304765	-	-
19503	PRNP	NM_000311.2	824	tgtgcagcgccttccttcacttccttttg	304777	-	Creutzfeldt-Jakob disease(クロイツフェルト-ヤコブ病), Creutzfeldt-Jakob disease(クロイツフェルト-ヤコブ病), fatal familial insomnia(致死性家族性不眠症), Gerstmann-Straussler-Scheinker syndrome(ゲルスマン-シュトライスラー-シェンカー病), scrapie(スクレイピー), schizophrenia(精神分裂症), Lewy body dementia(レビー小体病), Gerstmann-Straussler disease(ゲルスマン-シュトライスラー-シェンカー病), familial fatal insomnia(致死的不眠症)
19504	ATP6V004	NM_020832.1	1257	cagcttcgcacgccttccttcacttccttttg	304798	-	-
19505	ATP6V002	NM_152565.1	532	ctgtgcagcgccttccttcacttccttttg	304834	-	see also 9682 line
19506	BAT3	NM_004639.2	3582	cagcagcttccttcacttcacttccttttg	304837	-	see also 3153 line

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19549	PPT1R15A	NM_014330.2	1460	cagctacacacagcagctcaaaa	306354	-	apoptosis	-	-
19550	HEPRMO	NM_011984.1	383	ccacacacacacacacacacac	306359	-	cell cycle	-	-
19551	SESN1	NM_011454.1	516	atctctctctctctctctctctct	306377	-	cell cycle	-	-
19552	SESN2	NM_031459.3	1486	ttttctctctctctctctctctct	306427	-	see also 9035 line	-	-
19553	SESN3	NM_144665.2	1581	tattctctctctctctctctctct	306473	-	cell cycle	-	-
19554	BCOP	NM_018567.2	423	gtttacacacacacacacacac	306486	-	cell cycle, kinase related	-	-
19555	CONA1	NM_003914.2	1049	aattgacagcagcttgcctctatc	306555	-	cell cycle, kinase related	translation regulator	-
19556	CONA2	NM_001237.2	1222	ttgtctctctctctctctctctct	306588	-	see also 809 line	-	-
19557	CONE2	NM_004702.2	738	cttctctctctctctctctctct	306600	-	cell cycle, kinase related	-	-
19558	CONG1	NM_004060.3	595	ttctctctctctctctctctctct	306628	-	see also 2736 line	-	-
19559	RGC32	NM_014059.1	322	gttctctctctctctctctctct	306655	-	cell cycle, kinase related	-	-
19560	BUB3	NM_004725.1	288	gagctctctctctctctctctct	306663	-	-	-	-
19561	MAD2L2	NM_006341.2	718	tttgaagcagcagctctctctct	306694	-	cell cycle	-	-
19562	CHFR	NM_018223.1	1878	aagctctctctctctctctctct	306715	-	see also 7328 line	-	-
19563	MAD2L1	NM_002358.2	130	tcttttgcagctctctctctct	306721	-	cell cycle	-	-
19564	GML	NM_002066.1	188	ctttctctctctctctctctctct	306726	-	apoptosis, cell cycle, signal transduction	GPI-anchored membrane-bound receptor	-
19565	CONG2	NM_004354.1	619	ttctctctctctctctctctctct	306767	-	see also 2913 line	-	-
19566	CD116	NM_003903.2	1402	tgatctctctctctctctctctct	306829	-	see also 2860 line	-	-
19567	CENPF	NM_016343.2	1126	cagctctctctctctctctctct	306895	-	-	-	-
19568	ANAPC7	NM_016238.1	1103	tctctctctctctctctctctct	307046	-	see also 6744 line	-	-
19569	BC12	NM_006933.1	72	tattctctctctctctctctctct	307067	-	apoptosis, cell cycle	-	-
19570	BTG3	NM_006906.3	866	gttctctctctctctctctctct	307092	-	cell cycle	-	-
19571	CONB1	NM_031966.2	866	ttctctctctctctctctctctct	307117	-	cell cycle	USF43/USF44 complex	-
19572	CONB2	NM_004701.2	543	gttctctctctctctctctctct	307151	-	see also 3221 line	-	-
19573	CONB3	NM_033031.1	217	tttttttttttttttttttttttt	307171	-	cell cycle	-	-

osteochondroma(骨軟骨腫), leukemia(白血病),
chondrosarcoma(軟骨肉腫), colorectal
cancer(大腸癌), non-hodgkin lymphoma(非ホジ
キンリンパ腫), lung cancer(肺癌),
neuroblastoma(神経芽細胞腫), ovarian
cancer(卵巣性卵巣癌), colorectal cancer(結腸
直腸癌), squamous cell carcinoma(扁平上
皮細胞癌), lymphoma(リンパ腫), Hodgkin's

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19574	CCND1	NM_053056.1	672	atgacccgcagcagtttcattga	307249	-	-	USF43/USF44 complex	衣細胞腫、chondrosarcoma(軟骨肉腫)、lymphoid cancer(淋細胞)、non Hodgkin lymphoma(非ホジキンリンパ腫)、liposarcoma(脂肪肉腫)、breast cancer(乳癌)、Li-Fraumeni syndrome(リー-フrawmeニ症候群)、leukemia(白血病)、osteosarcoma(骨腫性骨肉腫)、parathyroid adenomatosis(副甲状腺腫瘍)、Ewing's sarcoma(エーイング肉腫)、head and neck cancer(頭頸部癌)、lymphoma(リンパ腫)、multiple myeloma(多発性骨髄腫)、head and neck squamous cell carcinoma(頭頸部扁平上皮細胞癌)、squamous cell cancer(扁平上皮癌)
19575	CCND2	NM_001759.2	1018	ttgagtcgctgctctcctaagc	307260	-	cell cycle	cyclin-dependent protein kinase, regulator	nerve sheath tumors(神経腫瘍)
19576	CCND3	NM_001760.2	729	ctctgtcacaagataacatttg	307267	-	cell cycle	cyclin-dependent protein kinase, regulator	-
19577	CCNE1	NM_001238.1	454	acgttcacactcctgagttatgc	307274	-	see also 810 line	-	-
19578	CCNE	NM_001761.1	2339	aacgcgataaacctcagataca	307330	-	cell cycle	cyclin-dependent protein kinase, regulator	-
19579	HACR	NM_017813.1	643	ttctgtacacctccatcaacttct	307337	-	cell cycle	-	-
19580	6	NM_005792.1	72	ctctcctcagtgatttgcgaag	307349	-	cell cycle	unknown	-
19581	MPHOSH	NM_022782.2	975	ctgactcagatcctctctctca	307372	-	cell cycle	-	-
19582	NEDD9	NM_008403.2	173	tgcacaggctcctctatgtcaat	307443	-	see also 4486 line	-	-
19583	NOL1	NM_008170.1	1031	ctgacactgctgtgtgatctt	307504	-	cell cycle	-	-
19584	NUGC	NM_008600.2	611	cggggcagcagctcccatatcc	307527	-	see also 4851 line	-	-
19585	SUGT1	NM_008704.2	779	aagacactatcatctatcatc	307550	-	see also 4730 line	-	-
19586	TOB2	NM_018272.2	639	tgccttcctctgttccacattg	307561	-	cell cycle	-	-
19587	HEC	NM_008101.1	345	aagacccgcagcaccacttaaga	307569	-	see also 4245 line	-	-
19588	PRC1	NM_003881.2	1654	tgtatcattctggcctatcttgg	307654	-	-	-	-
19589	HCAP-G	NM_022346.2	2700	ccgttcgcagcaagatctcgat	307741	-	cell cycle	-	-
19590	ODC27	NM_001256.2	2014	gagtaactctcagacattatcat	307827	-	see also 812 line	-	-
19591	INCENP	NM_020238.1	625	caggaactccagcagctcagatga	307860	-	cell cycle	-	-
19592	PSEN1	NM_000021.2	532	tgtctctcctacattcaatga	307985	-	-	-	-
19593	PSEN2	NM_000447.1	411	atgcagcagcctctcctatctca	308019	-	apoptosis	-	-
19594	SCF5	NM_008455.2	334	ggccacatcagagagacacagc	308075	-	see also 4525 line	-	-
19595	TSCA2	NM_080601.1	473	atgcctctctctctctctctcat	308093	-	-	-	-
19596	C10orf9	NM_145012.3	403	atctctctctcagaaatattct	308120	-	see also 9764 line	-	-
19597	CCNK	NM_003953.2	284	ttggagcctcctctctctcttga	308130	-	see also 2622 line	-	-

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19629	BS72	NM_004335.2	11	tgactctactctgtgctactat	309073	-	kinase related	-	rheumatoid arthritis(関節リウマチ)
19630	DAB2	NM_001243.1	1123	tgctctactctgtgctactat	300995	-	see also 887 line	-	-
19631	EM2	NM_001423.1	246	tgctctactctgtgctactat	309118	-	-	-	breast cancer(乳癌)
19632	EM2P	NM_001423.2	447	actgctgctgctgctgctgctg	309133	-	-	-	-
19633	LAMP3	NM_0014386.2	1089	actgctgctgctgctgctgctg	309136	-	-	-	-
19634	GRI1	NM_005097.1	1079	atcagagctgctgctgctgctg	309201	-	see also 357/4 line	-	-
19635	PDOL1G	NM_011432.2	411	gtgctgctgctgctgctgctg	309249	-	signal transduction	-	melanoma(メラノーマ)
19636	PRG4	NM_005907.1	284	gtgctgctgctgctgctgctg	309272	-	see also 4055 line	-	-
19637	RBBP7	NM_002893.2	1165	cggtgctgctgctgctgctg	309371	-	-	-	-
19638	SIL	NM_003035.1	558	atgacctgctgctgctgctg	309386	-	see also 2034 line	-	-
19639	SPOCK	NM_004598.2	1425	atgacctgctgctgctgctg	309518	-	-	-	-
19640	TMA5F8	NM_005724.4	622	cgctgctgctgctgctgctg	309521	-	see also 3971 line	-	-
19641	TMA5F9	NM_005723.2	743	cgctgctgctgctgctgctg	309534	-	see also 3970 line	-	-
19642	TPD52L2	NM_003288.2	632	agctgctgctgctgctgctg	309543	-	-	-	-
19643	TSPAN-1	NM_005727.2	740	tgctgctgctgctgctgctg	309552	-	-	-	-
19644	TSPAN-2	NM_005725.2	408	gctgctgctgctgctgctg	309562	-	see also 3972 line	-	-
19645	FLJ32871	NM_144674.1	199	ggctgctgctgctgctgctg	309572	-	-	-	-
19646	EM11	NM_004434.1	758	ggctgctgctgctgctgctg	309585	-	-	-	-
19647	SPRY2	NM_005846.2	1183	carctgctgctgctgctgctg	309636	-	signal transduction	-	-
19648	UBIGCP2	NM_008659.1	1325	agctgctgctgctgctgctg	309658	-	see also 4104 line	-	-
19649	UBIGCP3	NM_008322.3	1583	ctgctgctgctgctgctgctg	309715	-	see also 4423 line	-	-
19650	PLEK2	NM_018445.1	1073	ggctgctgctgctgctgctg	309773	-	see also 6860 line	-	-
19651	CAP1	NM_005367.2	307	tgctgctgctgctgctgctg	309778	-	signal transduction	-	-
19652	CAP2	NM_005368.1	1380	gtgctgctgctgctgctgctg	309819	-	signal transduction	-	-
19653	KISS1	NM_002256.2	469	agctgctgctgctgctgctg	309925	-	-	-	breast cancer(乳癌), melanoma(メラノーマ)
19654	PEX11A	NM_003847.1	334	tgctgctgctgctgctgctg	309931	-	-	-	-
19655	PEX11B	NM_003846.1	301	tgctgctgctgctgctgctg	309953	-	signal transduction	-	-
19656	PEX16	NM_004813.1	650	tgctgctgctgctgctgctg	309860	-	see also 2814 line	-	-
19657	PEX3	NM_008330.1	448	tgctgctgctgctgctgctg	309878	-	-	-	Zellweger syndrome(ゾエルウェーガー症候群)
19658	PFX	NM_002857.1	81	gtctctgtgctgctgctgctg	309909	-	see also 2437 line	-	-
19659	PIXMP3	NM_000318.1	534	caactgctgctgctgctgctg	309921	-	see also 1890 line	-	-
19660	GOLGB1	NM_004487.1	2206	tgactgctgctgctgctgctg	309993	-	-	-	peroxisome biogenesis disorder(ペルオキシソーム生合成障害), Zellweger syndrome(ゾエルウェーガー症候群)
19661	EBNA1BP	NM_008242.1	530	acgagctgctgctgctgctg	310174	-	-	-	rheumatoid arthritis(関節リウマチ)
19662	RRS1	NM_015169.2	452	ggctgctgctgctgctgctg	310185	-	-	-	-
19663	TINF2	NM_012481.1	1179	agagagctgctgctgctgctg	310201	-	-	-	-
19664	PALM	NM_002578.1	570	cgctgctgctgctgctgctg	310202	-	-	-	-
19665	SOCS2	NM_003877.3	806	tgctgctgctgctgctgctg	310210	-	see also 2837 line	-	-
19666	SOCS3	NM_003955.2	589	cgagagctgctgctgctgctg	310220	-	protein kinase inhibitor	-	-

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19667	SOCS4	NM_004232.2	1707	tgatatacctcattataccaga	310263	-	see also 2824 line
19668	SOCS7	NM_080887.2	1648	tacatacctcctccatccatc	310305	-	see also 9532 line
19669	NDRC4	NM_020465.1	473	caacatttgcttgtaataatg	310312	-	-
19670	PLEKHC1	NM_006832.1	1609	gagcagatgctccatgataaac	310355	-	-
19671	APCS5	NM_004846.1	364	tgagcagatgctccatgataaac	310368	-	see also 3359 line
19672	BCAS3	NM_017619.2	1367	atctccatgctccatgataaac	310423	-	see also 7108 line
19673	BCAS4	NM_017843.2	213	ctctacagatgctccatgataaac	310456	-	-
19674	BCL9	NM_004326.1	1814	cgagatgctccatgataaac	310476	-	signal transduction
19675	CDRI	NM_004065.1	538	tgatctcagcagatgataaac	310531	-	-
19676	CLN5	NM_006493.1	1976	tgctccatcctccatgataaac	310539	-	-
19677	DACH	NM_004392.2	1765	gagcagacagcctgacaaagc	310571	-	ceroid-lipofuscinosis(セロイドリポフスチン蓄積)
19678	DACH2	NM_005387.1	132	tgatttgcttgcttaacaccca	310585	-	see also 2933 line
19679	FRA11	NM_005479.2	862	ctctgcttgcttgataaacctcc	310615	-	see also 9480 line
19680	FSTL3	NM_005860.1	190	ctctgcttcgagcaacttgaca	310618	-	signal transduction
19681	GPC3	NM_004484.2	1556	gagccatgttgcttgataaac	310655	-	see also 3040 line
19682	HHCM	NM_006543.1	623	gttatacacttgcttgataaac	310676	-	-
19683	LMC2	NM_005574.2	1268	aagctcttcgagagactatct	310683	-	see also 3876 line
19684	OS-9	NM_006812.1	617	ggatctcagctgacacttgatg	310708	-	-
19685	SEMA3C	NM_006379.2	1375	tgactctgagcttgcttgacaa	310752	-	see also 4472 line
19686	SS18	NM_005637.1	85	atttttgcttgataaacactcc	310792	-	synovial sarcoma(滑膜肉腫)
19687	TACC3	NM_006342.1	301	caagccagagacttgataaac	310824	-	-
19688	TOL1A	NM_021866.1	312	caattcttgcttgatgataaac	310848	-	leukemia(白血病), lymphoma(リンパ腫)
19689	CRADD	NM_003805.2	105	gagccagagacaaacaaactact	310852	-	signal transduction
19690	DIABLO	NM_019887.2	187	ctctgcttgcttgataaac	310866	-	apoptosis
19691	FADD	NM_003824.2	590	gtcagcttgcttgataaac	310885	-	apoptosis, signal transduction, kinase related
19692	CIDEB	NM_014300.1	1209	gtcagcttgcttgataaac	310892	-	apoptosis, signal transduction
19693	BAK1	NM_001189.2	676	ccgcttgcttgcttgataaac	310900	-	apoptosis
19694	BCL2L11	NM_006538.1	361	atgatttgcttgataaac	310910	-	apoptosis
19695	BIK	NM_001197.3	383	gtcagcttgcttgataaac	310915	-	apoptosis
19696	BNIP-3L	NM_004331.1	490	aatttgcttgcttgataaac	310920	-	apoptosis
19697	CJAS1	NM_004895.3	901	tgatcttgcttgataaac	310926	-	apoptosis, signal transduction
19698	EIZ4	NM_004879.2	734	tgatttgcttgcttgataaac	310988	-	see also 3388 line
19699	TRADD	NM_003789.2	540	gagcagcttgcttgataaac	311002	-	apoptosis, signal transduction, kinase related
19700	API5	NM_006595.1	145	ggatttgcttgcttgataaac	311013	-	-
19701	BCL2A1	NM_004049.2	232	ctcagcttgcttgataaac	311050	-	apoptosis inhibitor

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19702	BCL2L2	NM_004050.2	217	tgacgaatttgatgattgaag	311065	-	apoptosis	molecular_function	-
19703	BECN1	NM_033768.2	1111	gaatacaccggtgctctctatg	311067	-	see also 2577 line	unknown	-
19704	BIRC2	NM_001165.2	1075	gaagatgaacccctcagatg	311113	-	see also 743 line	-	-
19705	BIRC3	NM_001165.3	2870	ctcagccgaatgcctcctatgc	311140	-	apoptosis,	-	-
19706	BIRC8	NM_03341.2	1916	caatccagctgattgattgaagc	311200	-	signal transduction	-	-
19707	BNIP1	NM_001205.1	27	actccacagctcagatgcctgaac	311201	-	apoptosis	apoptosis inhibitor	-
19708	FAM2	NM_012306.2	431	cagaagatctcagatctcttctg	311227	-	apoptosis	-	-
19709	GSG-1	NM_014350.1	821	aattccatcagcagatgattgaa	311238	-	apoptosis	-	-
19710	TAX1BP1	NM_006024.4	259	gattactctcagatgatttaca	311256	-	apoptosis	-	-
19711	TOSO	NM_005449.3	366	ccgattactctgaagcaatcc	311321	-	apoptosis	-	-
19712	MCL1	NM_021960.3	567	tggttcgggaatctgattataac	311336	-	apoptosis	apoptosis regulator	-
19713	AXUD1	NM_032027.2	728	aagtcctccagcagctctgaaga	311357	-	see also 9349 line	-	-
19714	BCL2L12	NM_052842.2	748	cttgagagcgtccactgcaaatg	311370	-	apoptosis	-	-
19715	BCLG	NM_030766.1	540	ggatcaagaagcgttgatgaacc	311384	-	apoptosis	-	-
19716	CARD6	NM_032587.2	466	ttctcactctgaagcatgaattt	311413	-	apoptosis	apoptosis regulator	-
19717	CARD8	NM_014959.1	615	caatcagatcgtctgattcttc	311480	-	apoptosis	apoptosis regulator	-
19718	CARD9	NM_022352.2	444	ccgctctctctcctatctatcg	311495	-	apoptosis	-	-
19719	COP	NM_052889.1	272	caagctccagatccagaaatg	311498	-	apoptosis	-	-
19720	CTNNA1	NM_003798.1	516	tgagacccagatgactcttaag	311511	-	see also 2597 line	-	-
19721	MAEA	NM_005882.2	1180	aagatccctgagcagcagaaat	311566	-	apoptosis	-	-
19722	MGO13096	NM_032346.1	657	caatctctctggagagctctatgc	311595	-	apoptosis	-	-
19723	NOXA-PT	NM_013438.2	2510	atgacgctactcagctcaataga	311678	-	see also 5432 line	-	-
19724	PDOS8P	NM_013374.2	1280	aagccgatttggttgacagatca	311739	-	signal transduction	-	-
19725	PPP1R13B	NM_015161.1	1295	aagatccaaatccgctcattgag	311784	-	apoptosis	-	-
19726	TAP-2	NM_024969.2	1667	atgacccagcagcaatcctgtga	311832	-	see also 8829 line	-	-
19727	TEGT	NM_003271.1	623	aagccgacatgagctgattgaaga	311850	-	apoptosis	-	-
19728	TRIAO3	NM_019017.1	1248	aagatccctctcctattgataaga	311860	-	-	-	-
19729	C6	NM_000065.1	1212	ttgtacagccgatatctcgatga	311905	-	complement	complement	-
19730	C7	NM_000065.1	918	tggttgcttgtagagcagatca	311970	-	complement	complement	-
19731	C8A	NM_000562.1	634	ttgttgatgagctcatttat	312002	-	see also 409 line	complement component 7 deficiency(補体7欠損)	-
19732	C8B	NM_000066.1	314	atgaggacagcgtgcactctct	312046	-	complement activity	complement component 8 deficiency(補体8成分欠損症)	-
19733	C9	NM_001737.2	429	aagatgcagctcgtgtaagga	312091	-	hemolysis	complement component 9 deficiency(補体9欠損症)	-
19734	PAOR10	NM_198403.1	422	tcacagctgagctgactcttctc	312139	-	see also 10321 line	-	-
19735	CLUL1	NM_014410.4	451	aagctatccagcagctctttg	312147	-	-	-	-
19736	OPTN	NM_021380.3	1764	caacgaatctcagctgactcttc	312163	-	see also 8239 line	-	-
19737	SMPX	NM_014332.1	374	cagagccctcgactcaactatcg	312205	-	-	-	-
19738	TNNI2	NM_000364.1	758	atgacagacataactcttgg	312210	-	-	-	-
19739	DYSF	NM_003494.2	5100	ttcttcttgctgacttactatg	312256	-	see also 2358 line	cardiomyopathy(アール性心筋症)	-
19740	EMD	NM_000111.1	60	tggaactcctcagcagctctctg	312280	-	-	muscular dystrophy(筋ジストロフィ)	-
19741	FER1L3	NM_013451.2	686	caatcagctcctcagctgata	312307	-	-	-	-

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1742	SGCA	NM_000231.1	733	ccgttctgactcgaatctgaac	312451	-	-	Duchenne-like muscular dystrophy(デュシェンヌ型筋ジストロフィー) limb girdle, muscular atrophy(後帯型筋ジストロフィー)
1743	SLHAP	NM_007158.1	481	aggtttacacacgacgacgaga	312484	-	-	-
1744	SSPN	NM_005080.3	413	aggtttgacgacgacgacgacgac	312491	-	-	-
1745	PEZ1	NM_005103.3	328	ttggagacgctgacgaatgattt	312522	-	-	-
1746	SEMA3B	NM_004636.1	561	ttggactctgctgctgctgaccttc	312538	-	-	-
1747	FTR	NM_016948.3	914	cgtctdctatccgacgaatcgagag	312550	-	-	-
1748	NEO1	NM_002499.1	2285	cgtcttcaacatcaatgctgaca	312627	-	-	-
1749	PECAM1	NM_000442.2	913	caagcccaacggaatgctgactgag	312698	-	-	-
1750	SEMA8E	NM_012431.1	2132	agcctttccgagacgaatgctg	312788	-	-	-
1751	TMSF6	NM_003702.2	297	ttgtctgctgacgctgacttatt	312812	-	-	-
1752	TPBG	NM_006870.3	1643	atcgcgaacccagcttaagaac	312854	-	-	-
1753	GAGEB1	NM_003785.2	140	cgcctgagacgaatgctgctgctg	312859	-	-	-
1754	LYGH	NM_002347.1	340	agatcactcgtgctgacgaatg	312862	-	-	-
1755	PTX3	NM_002852.2	163	ttgcgcgaactcgtgctgattat	312865	-	-	-
1756	OD1B	NM_001764.1	324	tgattctgctggaatgctgacag	312903	-	-	-
1757	OD1C	NM_001765.1	330	tgatttactcggagagattcaag	312922	-	-	-
1758	CD226	NM_006566.1	900	acgaacactctgctgctgattg	312964	-	-	-
1759	CD2BP2	NM_008110.1	291	ttgggtgctccacaaatgaca	312974	-	-	-
1760	GD53	NM_000560.2	618	aggttctgctgctgctgctgctg	312994	-	-	-
1761	C10A	NM_015991.1	473	ctgtaccgctgctgctgctgctg	312999	-	-	-
1762	C10B	NM_000491.2	393	aggttgaatcggagagctgctgag	313006	-	-	-
1763	C10G	NM_172689.1	442	aggttgaagggcagatgctgacac	313009	-	-	-
1764	C48PA	NM_000715.2	1573	ttgttcggcagcggagaaactcttc	313055	-	-	-
1765	C48PB	NM_000716.2	306	atggttgcctgctgctgctgcttc	313059	-	-	-
1766	DAF	NM_000574.2	1304	caggttactaccgctgcttcttctct	313099	-	-	-
1767	PHR5	NM_030787.1	638	ttgctgactcagctcagttcaattg	313101	-	-	-
1768	HF1	NM_000186.1	3671	ctgttgaacccggagatgctgct	313231	-	-	-
1769	PFC	NM_002621.1	1220	ctgtatccgagagaaatgaaatg	313242	-	-	-
1770	GD24	NM_013230.1	192	ttgccccaatcctgctgctgctg	313250	-	-	-
1771	CD83	NM_004233.2	846	ctgtatggcagggagaaactcagttg	313257	-	-	-
1772	HGRG8	NM_016258.1	719	cgtgttcgagcagctgctgctgctg	313281	-	-	-
1773	AIN2	NM_004833.1	983	ttgtgagaccccgagatgctgaca	313323	-	-	-

melanoma(メラノーマ)

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1974	ZGPI1	NM_0011852	374	cattgaacgctctccacttgc	-	-	-
1975	IAGBP	NM_0012123	298	ctcgcaccagcgaggacaagc	-	see also 794 line	-
1976	GDI4	NM_0017631	830	tatgatccacctgaattcgact	-	-	-
1977	ODS9	NM_000611.3	346	tgttggaactctcttcagaag	-	signal transduction	-
1978	CD96	NM_005816.3	673	ttgaacagcaacactctcataga	-	defense/immunity protein	-
1979	CEACAM8	NM_001816.2	891	atggcacattccagcaataacca	-	-	-
1980	CNH1	NM_005776.1	281	atgccctctcttgcatcataat	-	-	leukemia(白血癆)
1981	CTL44	NM_005214.2	407	ctctctgcgcacactctcatgag	-	-	rheumatoid arthritis(関節リウマチ、diabetes/糖尿病)
1982	GIP3	NM_002038.2	418	catcgacagtctcatgataataa	-	-	-
1983	ICOS	NM_012082.2	556	aaacacactaacgttatgataat	-	-	-
1984	KAGI1	NM_181337.2	935	ggatgacacctctaaaagagacg	-	-	-
1985	NK4	NM_004221.3	515	gaagacatctgcctctctaataga	-	-	-
1986	PAT1E	NM_139155.1	750	ctctgcgcctctctctcttgattt	-	-	-
1987	SMA7A	NM_003612.1	1599	ctgcgcactccaattactcaagc	-	see also 2426 line	-
1988	CAMLG	NM_001744.2	803	ctctcgaagtctgatatgaatgata	-	signal transduction	-
1989	CD94	NM_003874.1	301	actctcgaatctgcgcagcaacat	-	see also 2638 line	-
1990	LVE6	NM_002346.1	235	ctctctcctgcgcaggaacact	-	-	-
1991	NOZD7	NM_032206.2	9070	gaaggtctctcaactctacattca	-	signal transduction	-
1992	TIF-2	NM_005423.2	272	atgtctctgcgcagcagaacact	-	-	-
1993	TFP3	NM_003226.1	172	atgtctctgcgcagctgtttcaagc	-	-	-
1994	PSPTP1	NM_003978.2	745	ggacacactctctctctctcaaga	-	signal transduction	-
1995	LEG12	NM_002302.1	254	caggcgcactgagctctataatgt	-	-	pyogenic sterile arthritis(膿毒性乾癆症)
1996	DNA5	NM_004403.1	866	atctctcctcttgagctattcttc	-	-	deafness(聾)
1997	DSPF	NM_014208.1	1668	tagcacactgaacagcaactaataa	-	extracellular matrix structural constituent	-
1998	ITMBZ	NM_021989.2	466	actctctactactcttgagtaataag	-	-	dentinogenesis imperfecta(象牙質形成不全症)
1999	KONE1L	NM_017282.2	309	ggcgcagcagcctctctctcaaa	-	structural molecule	familial british dementia(痴呆系)
1990	NOG	NM_005450.2	751	gtatctcttgtctctcagaactctt	-	channel	-
19901	OTOR	NM_020157.2	145	atgatgaatgactctatactatt	-	-	sympathalgism(指節痛毒症)
19902	TBL1X	NM_005647.2	2105	gtctcactctgttgacactagaacg	-	signal transduction	-
19903	TMC1	NM_136913.2	1260	tgtctgtctgtgcactctcaag	-	transcription regulator	-
19904	USH2A	NM_059955.2	449	gaactctctcaactgaactctcttc	-	see also 3628 line	-
19905	GCPLP	NM_152401.1	699	tgttgagcaataacagctctgattg	-	see also 9474 line	-
19906	UNIC19	NM_005146.2	740	ccccgtctgtgtgtctcaataaag	-	-	-
19907	SNN	NM_003498.3	369	ggacacgtgtgttgtagagaagaag	-	-	-
19908	AHR3	NM_004312.1	538	cttgtgtctgcgaattctcaact	-	-	-
19909	OPJ3	NM_02138.1	148	ccccgcagcagctctctctcaaga	-	signal transduction	-
19910	PROM1	NM_000071.1	1619	tgtgataacactctactctctcaag	-	-	trimethyltin sensitivity(トリメチルスズ過敏症)
19911	RS1	NM_000330.1	525	ttgaacacacgctgtctctatg	-	-	retinal degeneration(網膜変性)
19912	RS1	NM_000330.1	525	ttgaacacacgctgtctctatg	-	-	retinosis(網膜分離症)

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19812	TULP1	NM_003222.2	768	aggagcagctctcagcgtatcaag	314024	-	see also 2254 line
19813	TULP2	NM_003223.1	1480	aggctctcagcctcaatttc	314058	-	-
19814	ARRB2	NM_004313.3	643	aggctctcagcctcagcgtctga	314095	-	see also 2886 line
CLONE249							
19815	45	NM_015863.1	861	ttccgcctctcagcactgaac	314092	-	-
19816	KMA1378	NM_020801.1	379	aggacagcgtcagcgaattcaga	314087	-	see also 7975 line
19817	STP1	NM_000819.1	137	tgctcagcctcagcactgaagc	314125	-	see also 4787 line
19818	SYN2	NM_003178.2	856	ctctgcctcagcctatagaacct	314154	-	see also 2156 line
19819	CALYON	NM_015722.2	382	ttggcctgcctcagcactgaac	314165	-	signal transduction
19820	CALYON	NM_004291.1	203	aggacgtcagcagtaaacagctgt	314167	-	signal transduction
19821	CBLN1	NM_004352.1	545	gattatgcagcaactgatctatc	314168	-	-
19822	HAP1	NM_003949.2	320	ttgacccgctctgtctccaaag	314180	-	-
19823	M0G	NM_002433.1	738	cgagtcacgcgaattgaagttct	314198	-	see also 1507 line
19824	CNTNAP2	NM_014141.3	647	aggtcattgctgctcagaattg	314220	-	-
19825	F13B	NM_001994.1	1722	aggagagcctctgttagatgg	314333	-	translation
19826	GP5	NM_004488.1	255	ctgacagcctcggcactctagg	314353	-	-
19827	MMRN	NM_007351.1	1207	tcgcgcagcagtgactacaactcc	314370	-	-
19828	TRO	NM_016157.2	128	cagatataagctctcattcttc	314507	-	-
19829	BYSL	NM_004053.2	632	gattctcagcagctctatcttc	314549	-	-
19830	CSN1S1	NM_001890.1	358	ttgtatctgaacagcaaacacc	314569	-	-
19831	NPHS1	NM_004646.1	3567	ggagccctctcagctgaactcc	314614	-	-
19832	NPHS2	NM_014825.1	837	ggagctaaagctggagatagag	314628	-	-
19833	TG737	NM_005531.2	369	aggcagctctctgcctatagc	314639	-	see also 5706 line
19834	IBSP	NM_004987.2	259	caggccagcagctctcttttcca	314706	-	see also 4565 line
19835	SFTPC	NM_003018.1	594	tgccagagctcgcctctctctaca	314721	-	-
19836	PRK2	NM_002625.1	3553	agctcagcgtgctctctctctca	314787	-	-
19837	GLP1R1	NM_000851.1	236	ctctctcagcgtctctctctca	314797	-	see also 1314 line
19838	PSORS1C	NM_010688.1	666	ttgctctcaactctatgactact	314837	-	-
19839	TT1C3	NM_003316.2	5060	aggagctctctctctctctctca	314840	-	-
19840	APBB1IP	NM_019043.2	1259	aggagctctctctctctctctca	314868	-	see also 7676 line
19841	C12orf2	NM_007211.2	518	ttggcagcagctctctctctctgt	314878	-	signal transduction
19842	FLJ10324	NM_019059.2	531	catctgaagccctctctctctct	314887	-	signal transduction
19843	NMB	NM_021077.2	370	aggagctctctctctctctcaact	314909	-	signal transduction
channel,							
19844	PKO112	NM_052892.2	3507	cagccacagcagcagctctgaacc	314934	-	signal transduction
cell cycle,							
19845	RASSF1	NM_007182.4	811	agctccctctcagcaactctctg	314974	-	signal transduction
19846	RASSF2	NM_014737.1	617	attccacacagcagctctctgag	314978	-	see also 5925 line
19847	RASSF3	NM_176169.2	149	aggccagcagcagctctctctca	315002	-	signal transduction
19848	RASSF4	NM_032023.3	620	cagccagcagcagctctctctca	315018	-	see also 9061 line
19849	RASSF5	NM_031437.1	756	aggccacacagctctctctca	315030	-	see also 9028 line
19850	RASSF6	NM_171532.2	439	ttgagatctctctctctctctg	315054	-	-
19851	HOMER2	NM_004839.2	152	aggccagcagcagctctctcaacc	315077	-	signal transduction
19852	CD47	NM_001777.2	928	tcgcgcgtctctctctctctgag	315120	-	signal transduction

lung cancer(肺癌), Ewing's sarcoma(尤文氏肉腫)

glioma(グリオーマ)

Factor XIIIb deficiency(-)
rheumatoid arthritis(関節リウマチ)

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19853	SIRPB1	NM_006065.1	830	caacttgcacccctcctagagaac	315129	-	-	signal transduction	-	-
19854	PAIRK7	NM_007282.3	136	gagccgctctccctctgagctgt	315134	-	-	signal transduction	-	-
19855	EDARAD	NM_080738.2	373	ctctccacagaacttaagctatga	315150	-	-	signal transduction	-	-
19856	AP1	NM_012301.2	4121	acgggaacacagcgtatgagcaac	315222	-	-	signal transduction	-	-
19857	ALP	NM_014476.1	238	ctctctctcagcagcagctatgaa	315228	-	-	signal transduction	-	-
19858	ARHGAP2	NM_020824.1	1643	agctttctcagcaacacagaa	315265	-	-	signal transduction	-	-
19859	ASB10	NM_080871.2	546	gagatattctcctctcacatccc	315352	-	-	signal transduction	-	-
19860	ASB11	NM_080873.1	538	gagatctctctggaanaaagct	315393	-	-	signal transduction	-	-
19861	ASB13	NM_024701.2	405	gacacagagctccgagcttctga	315403	-	-	signal transduction	-	-
19862	ASB14	NM_130387.4	650	tgaatacaattctgagctctttca	315428	-	-	signal transduction	-	-
19863	ASB15	NM_080926.2	603	aaagcagatgcaacacatctatga	315455	-	-	see also 9543 line	-	-
19864	ASB17	NM_080868.1	263	ctcttctgaacacagatcttaca	315460	-	-	signal transduction	-	-
19865	ASB2	NM_016150.3	2142	tgcctgactgcggttctgaaggt	315511	-	-	signal transduction	-	-
19866	ASB3	NM_016115.3	866	agacacattgacgttactactatt	315533	-	-	see also 6671 line	-	-
19867	ASB4	NM_016116.1	192	ctgttctctgctatgaattga	315572	-	-	signal transduction	-	-
19868	ASB5	NM_080874.2	421	tgccttgcctctctattcaacg	315606	-	-	signal transduction	-	-
19869	ASB6	NM_017873.2	714	acggagctcagatcccaaatct	315628	-	-	signal transduction	-	-
19870	ASB8	NM_024095.2	120	gagcctcttaattccgacaattct	315639	-	-	signal transduction	-	-
19871	ASB9	NM_024087.1	655	tggagcaacattgacacaaag	315663	-	-	signal transduction	-	-
19872	C20orf163	NM_080749.2	1031	ctctctcctctatgactaagaag	315670	-	-	signal transduction	-	-
19873	CTEN	NM_032865.3	959	caattctctgactcagctatgag	315677	-	-	signal transduction	-	-
19874	DCDC2	NM_018356.1	1068	atattccacactctcagctcaaca	315702	-	-	see also 6840 line	-	-
19875	EFS	NM_005864.2	1737	atgctcgtggaatattgactatgt	315711	-	-	signal transduction	-	-
19876	ENHGA	NM_005451.2	1227	tgcagcagagctatgagaga	315719	-	-	signal transduction	-	-
19877	FRB3/2P	NM_018895.1	2197	agctctgagcactgagaacac	315781	-	-	cell cycle,	-	-
19878	FLJ12428	NM_022783.1	1304	ggccacacgagctatgctctgag	315881	-	-	signal transduction	-	-
19879	FLJ12987	NM_025170.2	649	gtctactgtggcagcaactattt	315903	-	-	see also 8477 line	-	-
19880	FLJ14249	NM_022460.2	120	agctacggttggaagatgactct	315949	-	-	signal transduction	-	-
19881	FLJ20967	NM_022071.2	352	ctgtctcggagctgacatagctcc	315961	-	-	signal transduction	-	-
19882	FLJ21687	NM_024859.1	139	ctgtctctggcacaactatgac	315968	-	-	signal transduction	-	-
19883	FLJ23209	NM_024895.3	407	ggagcactctatctctctcaact	315997	-	-	signal transduction	-	-
19884	FLJ30934	NM_152760.1	540	actctgagacacacactcttttg	316009	-	-	signal transduction	-	-
19885	FLJ32798	NM_173496.2	1450	cagtatctgagcacaactaatga	316036	-	-	signal transduction	-	-
19886	FLJ33505	NM_152371.1	287	atctctctgttggtctgaagt	316046	-	-	signal transduction	-	-
19887	GIPC2	NM_017655.3	419	tgcctgtggagatctaatgtg	316071	-	-	signal transduction	-	-
19888	GIPC3	NM_132261.1	858	caaggtttgcaactctgttttga	316100	-	-	signal transduction	-	-
19889	GOPC	NM_020399.1	1237	tgcacatctgctacccttttacc	316127	-	-	see also 7864 line	-	-
19890	GORASP2	NM_015530.3	853	caatatactccctcttttacc	316154	-	-	signal transduction	-	-
19891	HS4	NM_032855.2	1449	caaggttttgcacacaagctatg	316167	-	-	signal transduction	-	-
19892	HSPC163	NM_014184.1	316	tttttttttttgcacacaactacc	316182	-	-	signal transduction	-	-
19893	KIAA1365	NM_020794.1	2700	agctctatccatggaggtctcatg	316361	-	-	signal transduction	-	-
19894	KIAA1444	NM_023512.1	713	ggagagctctgctctctcaact	316418	-	-	signal transduction	-	-

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18985	LM07	NM_005598.3	2132	aagatctatctctctctgaagg	316455	-	-	-	-
18986	LNK	NM_005415.1	2007	ccagctctgagctctgaatagg	316528	-	-	-	-
18987	LNV	NM_032822.1	1566	ttgacccctgagctctgaatagg	316566	-	-	-	see also 9261 line
18988	LOC11888	NM_173791.2	1182	agcctctcttctgaatctgaattct	316601	-	-	-	-
18989	LOC51248	NM_016484.3	182	ccagctctctctgaatctgaattct	316635	-	-	-	see also 6875 line
1900	MAG1	NM_173515.1	1949	gcgctctctctgaatctgaattct	316724	-	-	-	kinase related
19001	MG02793	NM_1451064.1	676	catctagctctctgaatctgaattct	316741	-	-	-	see also 9773 line
19002	MG032065	NM_153271.1	1220	aagatctctctgaatctgaattct	316751	-	-	-	-
19003	MG039715	NM_159248.2	942	agatctctctgaatctgaattct	316774	-	-	-	-
19004	MG05395	NM_023060.1	323	gagagctctctgaatctgaattct	316793	-	-	-	-
19005	MP4	NM_033066.1	1312	tgctctgagctctgaatctgaattct	316817	-	-	-	-
19006	MP5	NM_022474.2	2151	ctctctgagctctgaatctgaattct	316872	-	-	-	see also 8392 line
19007	NCK1	NM_006153.3	534	ttctgctctctgaatctgaattct	316906	-	-	-	see also 4255 line
19008	NOXO1	NM_144803.2	374	gcgctctctgaatctgaattct	316933	-	-	-	-
19009	PDLM2	NM_021430.4	529	ccgctctctgaatctgaattct	316936	-	-	-	-
19010	PDRK1	NM_024791.2	295	ctgagctctgaatctgaattct	316949	-	-	-	signal transduction
19011	PDRN1	NM_153371.2	1835	agagctctgaatctgaattct	316968	-	-	-	-
19012	PQDDBP	NM_004288.2	734	ttctgagctctgaatctgaattct	317030	-	-	-	see also 2873 line
19013	RACGAP1	NM_013272.2	647	aagctctctgaatctgaattct	317035	-	-	-	-
19014	RHPN1	NM_052924.1	1408	ccgctctctgaatctgaattct	317043	-	-	-	signal transduction
19015	RHPN2	NM_033103.3	1885	atgctctctgaatctgaattct	317055	-	-	-	signal transduction
19016	RMS2	NM_014677.1	3256	gttctctctgaatctgaattct	317136	-	-	-	see also 5872 line
19017	RP11	NM_178857.4	2323	gttctctctgaatctgaattct	317180	-	-	-	-
19018	SCRB	NM_015356.1	269	ttgctctctgaatctgaattct	317180	-	-	-	-
19019	SDCBP2	NM_015685.3	436	aagctctctgaatctgaattct	317189	-	-	-	-
19020	SDP35	NM_017718.2	761	agctctctgaatctgaattct	317207	-	-	-	-
19021	SH2B	NM_015503.1	3149	agctctctgaatctgaattct	317230	-	-	-	see also 6441 line
19022	SH2DA	NM_003975.2	745	catctctgaatctgaattct	317237	-	-	-	SH2/SH2 adaptor protein
19023	SHANK1	NM_011481.1	6281	aagctctctgaatctgaattct	317267	-	-	-	-
19024	SHD	NM_020209.1	923	ctgagctctgaatctgaattct	317270	-	-	-	-
19025	ShmL	NM_020859.1	6170	catctctgaatctgaattct	317313	-	-	-	-
19026	SLA2	NM_032214.2	583	aagctctgaatctgaattct	317320	-	-	-	signal transduction
19027	SSB1	NM_025106.2	470	ccgctctgaatctgaattct	317327	-	-	-	transcription regulat
19028	SSB3	NM_080861.3	379	cgagctctgaatctgaattct	317337	-	-	-	-
19029	STAC	NM_003149.1	533	agagctctgaatctgaattct	317352	-	-	-	-
19030	STAN4	NM_030755.2	196	ctgagctctgaatctgaattct	317378	-	-	-	-
19031	SYNJ2BP	NM_018373.1	497	atgagctctgaatctgaattct	317395	-	-	-	-
19032	TENG1	NM_015319.2	3952	ctgagctctgaatctgaattct	317417	-	-	-	-
19033	TLP2	NM_004817.1	2391	ctgagctctgaatctgaattct	317470	-	-	-	see also 3347 line
19034	WSE2	NM_018639.3	859	ttgagctctgaatctgaattct	317495	-	-	-	-
19035	XTP1	NM_018369.1	1115	aagctctgaatctgaattct	317506	-	-	-	see also 7423 line

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19936	CHL1	NM_006614.2	1723	caagcagctatcatcatgaa	317613	-	see also 4676 line
19937	FL38991	NM_173827.1	823	caagcagctatcatcatgaa	317711	-	signal transduction
19938	HAN11	NM_005828.1	666	tgactcagctatcatcatgaa	317746	-	signal transduction
19939	INPP4A	NM_001566.1	2811	agcttcagctatcatcatgaa	317787	-	see also 1065 line
19940	LRD1	NM_018494.2	2658	agcttcagctatcatcatgaa	317816	-	signal transduction
19941	RSU1	NM_017433.3	389	agcttcagctatcatcatgaa	317823	-	signal transduction
19942	SH3GL2	NM_003028.1	932	ccagcttcagctatcatcatgaa	317845	-	signal transduction
19943	SH3GL3	NM_003027.2	1345	agagcttcagctatcatcatgaa	317864	-	signal transduction
19944	UNC50L	NM_173561.1	617	tgagcttcagctatcatcatgaa	317877	-	see also 2029 line
19945	INCAM2	NM_004540.2	2252	ctgcaatagctatcatcatgaa	317901	-	signal transduction
19946	NUMJ2	NM_016533.4	397	agagcagctatcatcatgaa	317970	-	see also 3097 line
19947	EVA1	NM_005791.2	517	agagcagctatcatcatgaa	317979	-	-
19948	JAM2	NM_021219.2	1053	agagcttcagctatcatcatgaa	317989	-	-
19949	VCAM1	NM_001076.2	2296	agagcttcagctatcatcatgaa	318071	-	see also 672 line
19950	ZAN	NM_003386.1	1516	gagcttcagctatcatcatgaa	318089	-	-
19951	CD408	NM_007960.2	1169	gagcagctatcatcatgaa	318167	-	-
19952	COL17A1	NM_000494.2	3762	tgagcagctatcatcatgaa	318239	-	epidermolysis bullosa (表皮水疱症)
19953	DKFZP781	NM_032039.1	424	ctgagctatcatcatgaa	318255	-	-
19954	MD5028	NM_018463.2	673	agcttcagctatcatcatgaa	318276	-	-
19955	PPRIA2	NM_003625.2	1557	tgagcagctatcatcatgaa	318371	-	see also 2432 line
19956	SGOE	NM_003918.1	484	tgagcagctatcatcatgaa	318377	-	see also 2678 line
19957	HNT	NM_016522.2	1206	tgagcagctatcatcatgaa	318402	-	-
19958	CASPR3	NM_003655.1	768	agcagctatcatcatgaa	318411	-	cell adhesion molecule
19959	ADRN1	NM_007002.2	231	caagcagctatcatcatgaa	318414	-	-
19960	C1orf38	NM_008486.1	395	caagcagctatcatcatgaa	318427	-	-
19961	CASPR4	NM_003401.2	2051	caagcagctatcatcatgaa	318480	-	see also 9420 line
19962	caesp5	NM_100773.2	3148	agcagctatcatcatgaa	318615	-	-
19963	CD34	NM_001773.1	135	agcagctatcatcatgaa	318648	-	transcription factor
19964	CD98	NM_002414.3	239	cgagctatcatcatgaa	318666	-	leukemia (白血病)
19965	CDON	NM_016852.1	1229	cgagctatcatcatgaa	318709	-	-
19966	CDNT2	NM_005076.2	1941	agcagctatcatcatgaa	318774	-	-
19967	DCBLD1	NM_173674.1	601	tgagcagctatcatcatgaa	318809	-	see also 10108 line
19968	DSCAM	NM_001389.2	1066	ctgagctatcatcatgaa	318865	-	see also 955 line
19969	E48	NM_003695.1	98	caagcagctatcatcatgaa	318982	-	transmembrane ephrin
19970	EFNB1	NM_004429.3	1521	cgcttcagctatcatcatgaa	318987	-	-
19971	ESDN	NM_080927.2	1267	tgagcagctatcatcatgaa	319014	-	see also 9542 line
19972	IGSF1	NM_001555.1	4069	tgagcagctatcatcatgaa	319145	-	see also 1082 line
19973	LICAM	NM_000425.2	3510	gagcagctatcatcatgaa	319169	-	Gareis-Mason syndrome (Gareis Mason 症候群), hydrocephalus (水頭症), MASA syndrome (MASA 症候群), spastic paraplegia (痲痺)
19974	LSAMP	NM_002338.1	564	caagcagctatcatcatgaa	319186	-	see also 1513 line

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19975	MCAM	NM_006500.1	988	ccctggcgcctgctgctgctgctg	319209	-	-	lung squamous cell carcinoma(肺扁平上皮癌)
19976	MFG8	NM_005828.2	554	atgacacagcagctgctgctgctg	319221	-	-	melanoma(メラノーマ)
19977	NIN1J	NM_004148.2	373	ttgtcagctgctgctgctgctgctg	319231	-	-	-
19978	NRXN1	NM_004801.2	3908	ccggcgcgcgcgcgcgcgcgcgcgc	319329	-	-	-
19979	NRXN2	NM_015360.2	4033	ccgtggcgcgcgcgcgcgcgcgcgc	319368	-	-	-
19980	OND	NM_005010.1	645	ccgtggcgcgcgcgcgcgcgcgcgc	319403	-	-	-
19981	ONG	NM_002544.2	1648	acgaagctctgctgctgctgctgctg	319439	-	-	-
19982	PUNC	NM_004884.1	742	ccggcgcgcgcgcgcgcgcgcgcgc	319475	-	-	-
19983	SRPX	NM_006307.2	551	ggcgcgcgcgcgcgcgcgcgcgcgc	319498	-	-	-
19984	TROAP	NM_005480.2	2247	ggcgcgcgcgcgcgcgcgcgcgcgc	319533	-	-	-
19985	DAP4	NM_014902.2	2091	atcctcctgctgctgctgctgctgctg	319543	-	-	-
19986	EFNA5	NM_001962.1	412	ccgcgcgcgcgcgcgcgcgcgcgcgc	319556	-	-	-
19987	EFNB2	NM_004093.2	663	ccgcgcgcgcgcgcgcgcgcgcgcgc	319602	-	-	-
19988	IFRD1	NM_001550.1	1292	ttgtcgcgcgcgcgcgcgcgcgcgc	319624	-	-	-
19989	SPAG6	NM_017443.2	254	ccgcgcgcgcgcgcgcgcgcgcgcgc	319637	-	-	-
19990	MLF1	NM_022443.2	249	ggcgcgcgcgcgcgcgcgcgcgcgcgc	319679	-	-	-
19991	CRISP1	NM_001131.2	469	atgacacacgcgcgcgcgcgcgcgcgc	319715	-	-	-
19992	NP25	NM_013259.1	364	ccgcgcgcgcgcgcgcgcgcgcgcgc	319735	-	-	-
19993	PNMA1	NM_006028.3	1001	ccgtgacgcgcgcgcgcgcgcgcgcgc	319746	-	-	-
19994	CLN8	NM_018841.2	840	ctgcgcgcgcgcgcgcgcgcgcgcgc	319853	-	-	-
19995	DAB1	NM_021080.3	839	ccgcgcgcgcgcgcgcgcgcgcgcgc	319867	-	-	-
19996	FCMD	NM_006731.1	1024	ttgtcgcgcgcgcgcgcgcgcgcgcgc	319923	-	-	-
19997	MAB211.2	NM_006436.3	1674	ggcgcgcgcgcgcgcgcgcgcgcgcgc	319945	-	-	-
19998	MORP	NM_006501.1	84	ccgcgcgcgcgcgcgcgcgcgcgcgc	319947	-	-	-
19999	NEURL	NM_004210.3	1227	ttgtgacgcgcgcgcgcgcgcgcgcgc	319952	-	-	-
20000	NUMB1	NM_004756.2	324	ccgcgcgcgcgcgcgcgcgcgcgcgc	319953	-	-	-
20001	SEMA3A	NM_006080.1	600	ggcgcgcgcgcgcgcgcgcgcgcgcgc	319992	-	-	-
20002	SEMA6B	NM_020241.2	413	ttgtgacgcgcgcgcgcgcgcgcgcgc	320050	-	-	-
20003	SEMA6C	NM_030913.2	953	ccgcgcgcgcgcgcgcgcgcgcgcgc	320078	-	-	-
20004	EVC	NM_014556.2	2545	ccgcgcgcgcgcgcgcgcgcgcgcgc	320102	-	-	-
20005	CSRP3	NM_003476.1	223	ttgtgacgcgcgcgcgcgcgcgcgcgc	320113	-	-	-
20006	VAMP5	NM_006634.2	133	ccgcgcgcgcgcgcgcgcgcgcgcgc	320119	-	-	-
20007	CAV3	NM_001234.3	368	ttgtgacgcgcgcgcgcgcgcgcgcgc	320124	-	-	-
20008	SGCB	NM_000232.2	333	acgtgacgcgcgcgcgcgcgcgcgcgc	320139	-	-	-
20009	SGCD	NM_000337.3	693	ttgtcgcgcgcgcgcgcgcgcgcgcgc	320168	-	-	-

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20010	SGOG	NM 0092311	566	agaccacattactctataga	320197			Duchenne-like muscular dystrophy(デュシェンヌ型筋ジストロフィー)
20011	KRTHA2	NM 0022782	908	actgagagagatgactatg	320218			limb girdle muscular dystrophy(肢帯型筋ジストロフィー)
20012	SCLE	NM 0038432	993	agctgagatgaagctatcaaa	320238			
20013	TNFRAP2	NM 0067912	1911	agatttgaggaggaactatg	320270			
20014	ANKRD7	NM 0139441	417	tatttgcctgactacataat	320279			
20015	MEA	NM 0146231	901	ctgcctggctcggagatct	320289			cyclin-dependent protein kinase, regulator
20016	OCN1	NM 0068352	1549	tgaatcaaacggctctatagt	320309			
20017	FSHPRH1	NM 0087331	1137	tgtgttggttgctgaactatgt	320335		see also 4753 line	
20018	SPAG9	NM 0039713	1993	agttacaaacaggtgaacctg	320424		see also 2714 line	
20019	D8S2298E	NM 0058711	87	tgaatcccgatataaggatca	320482		see also 3942 line	
20020	SPAG1	NM 0031143	1029	ctctatctgctactacataaa	320521			
20021	VCV2	NM 0046781	528	gtttgtctgtgcatcatatgt	320563			
20022	XKRY	NM 0046771	1101	gaattgagacatcaatctaca	320574			
20023	FLCD1	NM 0054441	168	gttgcatctattgtgaactatg	320581		see also 3792 line	
20024	RL10292	NM 0180482	140	cggagcaggaactgaatgac	320601			
20025	SEMG1	NM 0030072	1365	acgtccgaacccatattacca	320614		see also 1069 line	
20026	ACRV1	NM 0016124	1008	tgaacagagatccaattatct	320630			
20027	AMN	NM 0309431	433	cctccacagacagctctcttct	320638			
20028	CLPTM1	NM 0012941	1408	gattctctgctgaagctataga	320652			
20029	DKK2	NM 0144211	1345	agcttgagagctcgacacaaaca	320656		signal transduction	
20030	DKK3	NM 0132533	1178	cgatgagagctcgacacaaaca	320681			
20031	G1L3	NM 0132421	679	cgatgagagctcgacacaaaca	320691		see also 5357 line	
20032	LOC59920	NM 0201631	1775	agggcagagctcgacacaaaca	320714		receptor activity	
20033	NRLN1	NM 1452342	1237	gagtcgacgttttggaactct	320742			
20034	NUMB	NM 0037443	1552	gagtcgacgttttggaactct	320769		see also 2564 line	
20035	SEMA3F	NM 0041862	289	cagtcgagctctctctcaaga	320785		receptor activity	
20036	SEMA6D	NM 0208581	1013	ttagcctcatgctcgtttatcta	320830		see also 8000 line	
20037	TCPT11	NM 0186792	959	aagtcagctgagctctctaatca	320920		transmembrane receptor	AAAD deficiency(AAAD欠損症)
20038	UPK2	NM 0071601	104	agggctgcgactctcaactct	320931			
20039	WHS02	NM 0056632	1393	attttacagagccacacaaagt	320945		transcription regulator or	Wolf-Hirschhorn syndrome(Wolf-Hirschhorn症候群)
20040	DOCK9	NM 0152961	979	tgtttcgttttgatgactctac	320976		translation	
20041	MGC10471	NM 0308182	406	cagctctgtttgtttgactcaatg	321129			
20042	NDP52	NM 0058313	266	tgaacacaaacccgttgatctaa	321141			
20043	AL52GR12	NM 1331631	1305	ctggagagatcgttctcttact	321198			
20044	ANGPTL3	NM 0149851	957	cagttgactccagtcacttaatt	321220		signal transduction	atherosclerosis(粥状硬化症)
20045	ANGPTL4	NM 0161092	534	cagttgactccagtcacttaatt	321241		apoptosis	
20046	BICD2	NM 0152501	2314	agcttcgagagacatctatca	321258		see also 8291 line	
20047	C14orf102	NM 0179702	1385	aagtcgagcagctcatctatca	321283		see also 7185 line	

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20048	C1orf44	NM_152445.1	146	caaggcaaccccaatattcc	321320	-	-	see also 3868 line	-
20049	C2orf11	NM_017864.2	691	gtctctcgtctgaaccacac	321351	-	-	-	-
20050	C2orf96	NM_153093.1	1122	agataccctggaggagctatttt	321366	-	-	-	-
20051	C6orf13	NM_035279.1	366	caggcatcatgaagctatggc	321369	-	-	-	-
20052	DAGT1	NM_016851.4	2030	agcggctggggccacacaaag	321408	-	-	-	-
20053	FLJ20386	NM_017780.1	1937	agaggaagctcgtgctatcac	321433	-	-	-	-
20054	GC02	NM_014635.3	3224	ctgctctatgatggctatcaaa	321520	-	-	-	-
20055	GOLGAT1	NM_002077.1	2364	tatgcctctcctgcagcgtatcac	321567	-	-	see also 1341 line	-
20056	GOLGAT2	NM_004486.3	1678	ttrtaaaccttcaatcagtgagac	321611	-	-	-	-
20057	GOLGAS	NM_005113.2	916	tggctcctttctccaaagatcc	321640	-	-	see also 3587 line	-
20058	GOLGIN-	NM_015003.3	1064	agacaactgcacacgttgagag	321697	-	-	-	-
20059	KIFRS2	NM_080747.1	1456	tgtgctctcaacacgttatggc	321701	-	-	-	-
20060	KIAA0373	NM_014684.1	2162	caattctctacagacagtttag	321737	-	-	-	-
20061	KRT23	NM_015515.3	1569	agacatctgacagagctatctcc	321845	-	-	-	-
20062	KRT24	NM_019016.1	976	ggacacgacctgcacaattact	321859	-	-	-	-
20063	KRT6IRS	NM_033448.1	1536	ggacagctgcacacgttcaaaag	321877	-	-	-	-
20064	KRTH81	NM_002281.2	51	ataacctctgcatatgaattttg	321880	-	-	monilethrix (温疹毛)	-
20065	MGRS1	NM_006337.3	1412	ggtttcagacgccatcatctgc	321885	-	-	-	-
20066	MGC33295	NM_152505.2	1209	gaactctgacagactttgacagc	321908	-	-	-	-
20067	MUPH	NM_024101.4	1047	ctgcaactgcagatctcatc	321928	-	-	-	-
20068	OLF2	NM_058164.1	883	gtcaactgcagatctcaatccc	321945	-	-	-	-
20069	PCNT2	NM_006031.3	10075	cttccacccgatatttaaccagt	322044	-	-	-	-
20070	PES1	NM_014302.2	1713	ctttacccggatgctattttgg	322061	-	-	-	-
20071	PP2R1B1A	NM_032902.4	751	tgttgctctggggccacatcat	322083	-	-	-	-
20072	P-SAP1P1	NM_014731.2	1891	agcctcctgcagccacagattt	322086	-	-	-	-
20073	PSIP22	NM_024430.2	505	caagaagctgggacgaagaaga	322122	-	-	see also 9046 line	-
20074	SHKBP1	NM_031892.1	1688	tggactcctgtgctcatctact	322124	-	-	-	-
20075	SPAG4	NM_003116.1	539	agagctctgagctctgtctatcc	322134	-	-	-	-
20076	SPAG4L	NM_008075.3	241	ctttctctcctgcgcacacatga	322139	-	-	-	-
20077	TACCT1	NM_006283.1	1689	aaagcaaaagctcgtctgtatcac	322177	-	-	see also 4375 line	-
20078	TACCT2	NM_006897.1	1549	tggacggggctgggcttcaacaag	322225	-	-	see also 4883 line	-
20079	TFPI10	NM_004610.1	1195	attctcctggagatgttaagatc	322250	-	-	-	-
20080	TFPI10L	NM_144659.1	312	ccctggctcatatgctgtttgta	322252	-	-	-	-
20081	TFP052	NM_005079.1	575	tgaattctggtctgaantctgag	322262	-	-	-	-
20082	UVRAG	NM_003369.2	1345	gttctctgagatcaaatcaaaag	322301	-	-	see also 2273 line	-
20083	VAMP1	NM_014231.3	460	gttccatctcgttggtattttg	322316	-	-	-	-
20084	VAMP2	NM_014232.1	380	atgcatctcttggagctattttg	322321	-	-	-	-
20085	VEZATIN	NM_017599.2	296	tgaatctgactgcactatcaac	322328	-	-	-	-
20086	ZWCC1	NM_014841.1	3915	caatctcctccgttggtattttg	322422	-	-	-	-
20087	DCNT4	NM_016221.2	521	tggacagctctgagacatctatg	322449	-	-	see also 6725 line	-
20088	EPJUN	NM_016357.1	518	ggcttcagatcccaactcaaaag	322488	-	-	see also 6841 line	-
20089	KRTAP11-	NM_175958.2	90	tgttctcagctggcccaacttacc	322535	-	-	-	-

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20131	LAPTM5	NM_006762.1	698	agctctgagctgacacagatg	323679	-	-	-	-
20132	PXM2	NM_018663.1	293	atgccttaccagctctctcttc	323684	-	-	-	-
20133	SRP72	NM_006947.2	881	atcgagaaagagagattttag	323719	-	-	-	-
20134	MGC4293	NM_031304.2	983	ttctctctctctctctctctctct	323749	-	-	-	-
20135	BRD7	NM_013263.1	1706	caaacctctctctctctctctctct	323771	-	-	-	-
20136	JCA1	NM_004968.1	207	agctctgagctgacacagatg	323777	-	-	-	-
20137	MVP	NM_005115.3	948	cggaacggaatggcagaatcagc	323823	-	-	-	-
20138	NFKBIE	NM_004556.1	230	cgttgcctgctccacacatacc	323834	-	-	-	-
20139	SNOG	NM_003087.1	175	aaagacacagagagactgtgttcca	323838	-	-	-	-
20140	TUB	NM_003203.3	843	caacacacagctacacagttcaag	323845	-	-	-	-
20141	FLJ39369	NM_152363.2	1206	ctctggagcggctgtattccaga	323859	-	-	-	-
20142	LEMD2	NM_181336.2	1295	aggaatggagctgtatctccat	323876	-	-	-	-
20143	ACRG	NM_052957.2	248	caagcaggttctctctctctct	323878	-	-	-	-
20144	AKIP	NM_017900.1	567	gaacacaaacagatcaagttcg	323924	-	-	-	-
20145	BARP1	NM_000465.1	1655	ctctgcctctgtgattatcaga	323979	-	-	-	-
20146	BOPI	NM_015201.3	2225	ggagagcttgagtgatctcttc	324006	-	-	-	-
20147	BRD4	NM_014299.1	795	tgagcttccacagatccaaaca	324017	-	-	-	-
20148	C5orf6	NM_016605.1	1059	ggagcctctgttgactttgaca	324039	-	-	-	-
20149	COIL	NM_004645.1	1121	tcagagcctctgtctcaattg	324062	-	-	-	-
20150	GTNBL1	NM_030877.3	536	ttctctggagacagatcaacaga	324080	-	-	-	-
20151	D21S2056	NM_003683.3	1000	caagaagcgtctctcaaaatg	324116	-	-	-	-
20152	BL28	NM_152437.1	1942	aaagttcttctctatataaga	324121	-	-	-	-
20153	DNT1P1	NM_052951.2	691	atgaatcacacattttttttg	324136	-	-	-	-
20154	PXSR2BE	NM_004698.1	900	gaatggacacctctctcaacttg	324142	-	-	-	-
20155	PANVA	NM_174951.2	1039	aaagtcgccaagagacacaaaga	324148	-	-	-	-
20156	FBXL4	NM_012160.3	1628	taattctgaatctctctctctct	324206	-	-	-	-
20157	PHL2	NM_014502.2	725	ttctctgaagagctgtctgtctac	324229	-	-	-	-
20158	FJX1	NM_014344.2	987	ttgttcacatggcgcctctctac	324241	-	-	-	-
20159	FLJ13479	NM_024706.3	620	ctctctgtaccagacatttc	324244	-	-	-	-
20160	FLJ14011	NM_022103.2	1340	aggtctgaatcgaatctctcttc	324255	-	-	-	-
20161	FLJ21628	NM_030613.1	804	aaatcttcaatctctctctctac	324265	-	-	-	-
20162	FLJ30728	NM_153018.1	1331	caagcggcctctctctctcttg	324292	-	-	-	-
20163	FLJ32053	NM_152484.2	2239	caatctctactcttaatttaca	324313	-	-	-	-
20164	FLJ36870	NM_173658.1	768	gatttggcgcttaattctacatc	324325	-	-	-	-
20165	FLJ38002	NM_154121.1	1068	ttgtttgaattctacttaata	324344	-	-	-	-
20166	FLJ38451	NM_175872.3	1618	agacgcctctcaacacaaattg	324376	-	-	-	-
20167	FLJ38705	NM_173832.2	631	ttttttgagcactttaacaca	324386	-	-	-	-
20168	FLJ90764	NM_173656.1	2023	caaaacccgaatctcttttctca	324401	-	-	-	-

Alzheimer disease(アルツハイマー病)

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20166	HRBP3	NM_003609.2	1768	atgctgcacatgaacacacaa	324409	-	-	-	-
20170	HSQC11	NM_016391.2	578	atgcctgcacacccctcctacacg	324416	-	-	-	-
20171	KIA0103	NM_014873.2	739	atgcctgcacacacccctcctacacg	324439	-	-	-	-
20172	KIA0324	NM_014891.1	1124	atgcctgcacacacccctcctacacg	324460	-	-	-	see also 5854 line
20173	KIA01190	NM_145166.2	460	atgcctgcacacacccctcctacacg	324478	-	-	-	-
20174	KIA01615	NM_020951.1	1389	atgcctgcacacacccctcctacacg	324497	-	-	-	-
20175	LOC114821	NM_138286.1	733	atgcctgcacacacccctcctacacg	324503	-	-	-	-
20176	LOC84661	NM_032574.1	373	catgaagctgctcctcctatt	324512	-	-	-	kinase related,
20177	LOC90589	NM_145233.2	586	atgcctgcacacacccctcctacacg	324519	-	-	-	signal transduction
20178	IPIN2	NM_014646.2	948	catgaagctgctcctcctatt	324529	-	-	-	-
20179	MDM1	NM_017440.2	197	ctgagctgtagcagcaaatga	324564	-	-	-	see also 7012 line
20180	MGC13071	NM_032689.2	1388	tgtgagctgaacttagtatcac	324626	-	-	-	transcription_regulat
20181	MGC27466	NM_152373.2	612	atgacgaacagcttaatacaat	324637	-	-	-	or
20182	MGC45408	NM_152289.1	1079	atgcctgaatgaacattcaaaa	324651	-	-	-	-
20183	NPAT	NM_002519.1	1365	ttgactgaatgaacattcaaaa	324692	-	-	-	-
20184	NLUK5	NM_022731.1	459	catcagatgaatctcctacatg	324801	-	-	-	-
20185	NUSAP1	NM_016359.1	1157	ttctctctccctcctacatga	324808	-	-	-	-
20186	PNCP	NM_020357.1	242	tgtgagctgaacacaaagaaa	324823	-	-	-	-
20187	PELP1	NM_014388.1	700	catgtgctgtagcagctcattc	324828	-	-	-	see also 5649 line
20188	PHLDA1	NM_007350.1	1016	atgccacatcgagctcacaatcc	324844	-	-	-	-
20189	PLINP-1	NM_052850.2	229	ttgtgagctccagctctcttttga	324846	-	-	-	-
20190	PRAC	NM_032391.2	129	ttgtgagctccagctctcttttga	324849	-	-	-	see also 3526 line
20191	RRBP5	NM_005051.1	241	ctctgaatgagccgaagctga	324854	-	-	-	-
20192	RNF144	NM_017146.2	1086	ttgagctctgagcagctgattc	324891	-	-	-	-
20193	SH3BGRL	NM_031489.1	398	ccgagctctgagcagctgattc	324900	-	-	-	-
20194	SH3BGRL	NM_031286.1	108	ccgagctctgagcagctgattc	324903	-	-	-	-
20195	UBCE1P5	NM_017946.2	716	catcctgctcctctctctcagcc	324909	-	-	-	see also 6146 line
20196	UTX	NM_021140.1	1461	catcctgctcctctctcagcc	324931	-	-	-	see also 8100 line
20197	UTX	NM_007125.3	2626	ttctgagcactatgactgagc	324977	-	-	-	-
20198	WDR13	NM_017883.3	1013	atggtgctctcctcagctgaga	325009	-	-	-	-
20199	WDR3	NM_006784.1	1284	ttgtctgctgagctctcattcc	325046	-	-	-	-
20200	WRB	NM_004627.2	423	ttgtctgctgagctctcattcc	325100	-	-	-	congenital heart disease (先天性心脏发育)
20201	ZFP1	NM_153688.1	636	ttgagctgagctctcagctgaga	325166	-	-	-	transcription_regulat
20202	ZNF285	NM_152354.2	264	aatttacctcttcagcagctgac	325176	-	-	-	or
20203	ZNF481	NM_152356.2	784	ttgtcagctctctctcagctgac	325190	-	-	-	transcription_regulat
20204	ZNF483	NM_175910.4	691	ttgtcagctctctctcagctgac	325194	-	-	-	or
20205	ZNF501	NM_145044.1	573	ttcttctcctaaacagctcaatcc	325199	-	-	-	transcription_regulat
20206	ZNF502	NM_032210.3	531	aagcccccctcctgaattattgag	325210	-	-	-	transcription_regulat

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20207	AT7JP	NM.0181763.1	1854	cgcttcaactctcgtgattat	325249	-	see also 7304 line	-	
20208	C1c7B	NM.0211782.2	966	cgctgagcagctctgattat	325317	-	-	-	
20209	LOS-1784	NM.060565.1	1262	cgctgagcagctctgattat	325365	-	-	-	
20210	L8510	NM.014054.2	1610	cgctgagcagctctgattat	325376	-	-	-	
20211	WDR23	NM.025230.3	947	cgctgagcagctctgattat	325394	-	-	-	
20212	FLJ12847	NM.024936.1	933	cgctgagcagctctgattat	325439	-	-	-	
20213	MDCI	NM.014641.1	6094	cgctgagcagctctgattat	325518	-	-	-	
20214	PAXP1L	NM.007349.2	534	tggtgttggttgattat	325521	-	see also 5082 line	-	
20215	OD9	NM.001768.2	425	ctcgcgcctctcggattat	325566	-	-	-	esophageal cancer(食道癌), breast cancer(乳癌), lung cancer(肺癌), pancreatic cancer(膵臓癌)
20216	ODW52	NM.001803.1	64	ctgcttcttgcttgattat	325601	-	-	-	
20217	DSOR2	NM.003720.1	661	tgctgtcttgcttgattat	325627	-	-	-	
20218	GARP	NM.005512.1	1636	ctgcttcttgcttgattat	325639	-	-	-	
20219	GNM6A	NM.005277.2	724	tgctgttgcttgattat	325658	-	see also 3702 line	-	
20220	GYPE	NM.002102.2	247	tgctgttgcttgattat	325671	-	-	-	
20221	HEM1	NM.005337.2	822	aagttaagcttgattat	325689	-	see also 3724 line	-	
20222	JTB	NM.006694.2	898	tgctgttgcttgattat	325744	-	-	-	hepatocellular carcinoma(肝臓癌), pancreatic cancer(膵臓癌), prostate cancer(前立腺癌)
20223	KAI1	NM.002231.2	184	ggcttcttgcttgattat	325760	-	-	-	
20224	M1TS1	NM.005989.2	2178	tgcttcttgcttgattat	325804	-	see also 4104 line	-	
20225	MLNA	NM.005511.1	174	ctgcttcttgcttgattat	325810	-	-	-	melanoma(メラノーマ)
20226	MOX2	NM.005944.3	462	ctgcttcttgcttgattat	325824	-	-	-	arthritis(関節炎)
20227	NET-5	NM.006675.2	299	tgcttcttgcttgattat	325832	-	-	-	
20228	NET-7	NM.012339.2	682	cgcttcttgcttgattat	325844	-	-	-	
20229	NKG7	NM.005601.2	162	tgcttcttgcttgattat	325849	-	-	-	
20230	PODXL	NM.005397.2	1289	cgcttcttgcttgattat	325859	-	-	-	
20231	PTPCAP	NM.005608.1	349	ggcttcttgcttgattat	325865	-	-	-	antimicrobial peptide
20232	STNGR3	NM.004209.4	402	atgcttcttgcttgattat	325867	-	-	-	
20233	TTA-2	NM.006474.3	543	cgcttcttgcttgattat	325874	-	-	-	
20234	TMSF13	NM.014398.2	247	ggcttcttgcttgattat	325879	-	-	-	
20235	TM7SF1	NM.003272.1	843	ggcttcttgcttgattat	325887	-	-	-	
20236	TMEM4	NM.014255.2	575	atgcttcttgcttgattat	325914	-	-	-	
20237	TMEM5	NM.014254.1	504	aattcttgcttgattat	325930	-	-	-	
20238	ADIPOR1	NM.015999.2	653	tgcttcttgcttgattat	325957	-	see also 6600 line	-	
20239	ADIPOR2	NM.024551.2	504	ggcttcttgcttgattat	325976	-	-	-	
20240	AMIGO2	NM.181847.2	1784	atgcttcttgcttgattat	326031	-	see also 10258 line	-	
20241	ANTXR2	NM.008172.1	187	aagcttcttgcttgattat	326040	-	-	-	
20242	ARL6P	NM.015161.1	556	ctgcttcttgcttgattat	326073	-	-	-	
20243	BM88	NM.016564.2	524	ctgcttcttgcttgattat	326073	-	-	-	
20244	C11orf16	NM.020644.1	258	atgcttcttgcttgattat	326077	-	see also 7901 line	-	
20245	C11orf14	NM.012109.1	375	cgcttcttgcttgattat	326089	-	-	-	
20246	C1orf8	NM.004872.3	987	tgcttcttgcttgattat	326110	-	see also 3385 line	-	
20247	G2orf103	NM.012261.2	557	tgcttcttgcttgattat	326120	-	-	-	

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20291	KIA0779	NM.015008.1	983	cgaggagagctatagactctca	326823	-	-	-	-
20292	LAP1446	NM.018407.3	1033	tgctctacacccgtatagatga	326818	-	-	-	-
20293	LEPRO1.L	NM.015394.1	298	atgagctacagctctgaaagact	326855	-	-	-	-
20294	LOC11621	NM.138461.1	351	tgatctgagctctgagctgaaga	326902	-	-	-	-
20295	LOC11644	NM.138786.1	188	ccgcttgcacttgctggactaat	326909	-	-	-	-
20296	LRR1.M	NM.178933.3	995	tgctctctatctgagctacaac	326937	-	-	-	-
20297	LRR1.M2	NM.178564.1	891	agtttgctctgactgaatttg	326959	-	-	-	see also 6475 line
20298	MAL2	NM.052886.1	551	atgacagacagctcttcttgctg	327006	-	-	-	-
20299	MGC35450	NM.153708.1	233	tggaagagctacgttgatgctg	327007	-	-	-	-
20300	MPDU1	NM.004870.1	26	tgagcggagagccgcttaaacg	327008	-	-	-	-
20301	MPR6	NM.017705.2	1258	cgatagcttgagccatcctct	327025	-	-	-	-
20302	NIE14	NM.023635.2	557	tgatgataaacgctatgctct	327036	-	-	-	-
20303	NIFA	NM.012342.1	987	tgagcaggttgcaaatgtagact	327047	-	-	-	-
20304	NPDC1	NM.015398.2	989	ctcttgcttgagctgctgaaga	327050	-	-	-	-
20305	PANX1	NM.015368.3	1460	cgaggagctgacccaagctact	327076	-	-	-	-
20306	PANX2	NM.052839.2	1404	ccgctgcgcacccacacaaag	327084	-	-	-	-
20307	PANX3	NM.052599.2	501	gattccacccctatgctctct	327092	-	-	-	see also 9472 line
20308	PAOR3	NM.177453.2	686	ctgagctcaagtactactatca	327121	-	-	-	see also 10163 line
20309	PAOR6	NM.024897.2	856	agacactctccatctcaatcc	327137	-	-	-	-
20310	PKO1.L1	NM.132955.2	2441	ggagcctctcaagtctactctg	327200	-	-	-	-
20311	RFT1	NM.052859.2	169	tggaatgcttgctactataat	327307	-	-	-	see also 9439 line
20312	SEGT.M1	NM.030004.1	474	tgatgagccacagctctcaaac	327342	-	-	-	kinase related
20313	SEZL	NM.031115.2	2940	agatgctgctactctctcaacc	327384	-	-	-	-
20314	SLC24A4	NM.153848.1	1396	tgcatatctgagctatcaacct	327413	-	-	-	see also 10003 line
20315	SMF1	NM.014313.2	380	agtcctgagctgctatgactgt	327431	-	-	-	-
20316	STAR3.N	NM.032016.2	330	tgacactctatctgacactata	327518	-	-	-	-
20317	SYNGR4	NM.017451.2	523	tgccgagccagcctctctagaaca	327533	-	-	-	-
20318	TACS1.D1	NM.006811.2	875	tgctgctgagctgctctctgaag	327543	-	-	-	see also 1522 line
20319	TDE1	NM.020354.1	792	tggtgctgctgaatctatata	327563	-	-	-	see also 4786 line
20320	TDE2	NM.020755.2	766	ggagcctgtatgacactgctact	327621	-	-	-	see also 7945 line
20321	TED	NM.015686.1	766	ggagcctgtatgacactgctact	327644	-	-	-	receptor activity
20322	TM4-B	NM.012466.2	554	acagacacagcactatctctaca	327666	-	-	-	-
20323	TM4SF12	NM.012338.2	249	tggttctctcgctctgctgctg	327674	-	-	-	see also 5298 line
20324	TM7SF3	NM.016551.1	1610	gagtcgagctgacacacattct	327738	-	-	-	-
20325	TM2C	NM.080751.1	2027	ggagcctctgacacacacattct	327763	-	-	-	see also 9522 line
20326	TMEFF1	NM.003692.2	318	ggagcctctgacacacacattct	327792	-	-	-	-
20327	TME10	NM.032071.2	760	ccgttaccctctactatagaaaa	327826	-	-	-	-
20328	TME10.5	NM.014908.1	748	ggagcctctgagctgagcttaica	327832	-	-	-	-
20329	TME2	NM.013390.1	1448	ggagcctctgagctgagcttaica	327887	-	-	-	see also 5419 line
20330	TMEW7	NM.031440.1	353	cttccccaactctcttgtagg	327983	-	-	-	-
20331	TNMD	NM.022144.1	1017	ccgactctgagacctctttagg	328011	-	-	-	see also 8313 line
20332	UPK1A	NM.007000.2	570	ctctccctccgctggagaaactta	328020	-	-	-	-
20333	UPK2A	NM.008953.1	649	gagctgacatgacacacacttcc	328028	-	-	-	-
20334	YANG1	NM.138959.1	1431	tgatctgagctgagctgagctg	328058	-	-	-	see also 9542 line

non-small-cell lung cancer(非小細胞肺癌)

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20375	PRH2	NM_005042.1	124	agaagcttccttcgtatataca	329141	-	-	-
20376	SCGB1D1	NM_006551.1	244	ttgagatcgtgctcttgagaaa	329144	-	-	-
20377	SCGB1D2	NM_006551.2	154	ctttgagatctcttcctcatag	329146	-	-	-
20378	SEMG2	NM_003008.2	1745	aagacagatcatatatactaca	329155	-	-	-
20379	ASPN	NM_017680.2	470	ttctcttcacgtgtgtccttt	329159	-	-	-
20380	GRTAP	NM_006371.2	644	cctgctacgtctgctgctacag	329197	-	-	-
20381	DDN	NM_001920.2	241	cttgctgtacagctttccacaga	329208	-	-	-
20382	GPC2	NM_152744.2	291	cctggatgtagcttaaacataa	329231	-	-	-
20383	O6orf19	NM_022343.2	143	cggagctgctaacagctttctga	329247	-	-	-
20384	DKFZP434	NM_031476.1	771	ttggagagcgtgtctctcttg	329258	-	-	-
20385	B044	NM_006862.1	289	aagaaactgtataatagctbaa	329274	-	-	-
20386	FLG2	NM_020426.1	398	tttcaacgtataaagaatttact	329324	-	-	-
20387	LOC57151	NM_031461.2	883	caggtctgtgtgacacatagtaa	329348	-	-	-
20388	MGC26768	NM_144634.2	514	agaaacgtctgcatactctc	329393	-	-	-
20389	MGC38497	NM_152436.1	151	agaaagcagatagactttatcaac	329400	-	-	-
20390	R3HDML	NM_178491.1	642	tacgtatctccctacacagatag	329426	-	-	-
20391	SPACA3	NM_173847.2	337	aactctacgtctgtttgaact	329432	-	-	-
20392	O6orf135	NM_024839.1	366	cctggagcaagcagattccaac	329440	-	-	-
20393	18C-FIP	NM_020772.1	670	agaaagactagcgcgaattctc	378684	-	-	-
20394	24432	NM_022914.1	992	tctacacacagactagctatttc	384854	-	-	-
20395	C2	NM_188993.1	828	agacttctgcatataagctgac	440387	-	-	-
20396	38D8-2	NM_014551.3	283	cttaccgtctctacatagagag	340830	-	-	-
20397	TA5	NM_182761.1	764	ttgacgtccgtccatagctaac	435165	-	-	-
20398	TA3	NM_033025.3	1105	tttggagctgacgtctcttggg	402608	-	-	-
20399	AASDHPH	NM_015423.2	246	ctctggcagctgctctgctacca	403727	-	-	-
20400	AA11	NM_033364.2	1073	cagctacacgtatgttcaaacat	352398	-	-	-
20401	ABG1	NM_022070.3	1854	ctgctactggttatagcattcca	382108	-	-	-
20402	AKMSD	NM_138326.1	337	ggatcacagagatgtttataga	407495	-	-	-
20403	ACN9	NM_020186.1	110	ggcttcacatagctgaaagacg	375862	-	-	-
20404	ACY-3	NM_080858.1	1001	cgtttacccgtgtttctaac	406564	-	-	-
20405	AD024	NM_02675.3	525	cagaaatctcagactcttataa	377913	-	-	-
20406	AD031	NM_032021.2	464	ctttttttctcagcttaatt	399748	-	-	-
20407	AD158	NM_032770.2	236	tttctgtttttgtgttactta	382794	-	-	-
20408	AD24	NM_02451.9	464	aagctcagaactatagctatga	392899	-	-	-
20409	ADAMT52	NM_025003.2	277	cttaccgtcagctatctctttc	404547	-	-	-
20410	ADAMTSL	NM_052866.2	624	ttgttcagagcgtatataatcc	404429	-	-	-
20411	ADCK2	NM_052853.1	1265	ctgtcttcacagcttaagatctc	391630	-	-	-
20412	ADCK4	NM_024876.2	1033	caggtctccagctgtgttaag	428685	-	-	-
20413	ADCK5	NM_174922.2	1040	ggagcttgagctgtgactatag	413020	-	-	-
20414	ADMP	NM_145035.2	384	ggagcagctcttcctatttt	422134	-	-	-
20415	AEBP2	NM_153207.2	731	agaagatcgtgcacatagcttta	422134	-	-	-

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図46 (続き)

圖46 (續前)

[illegible]

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図46 (続き)

20499	ATPAF2	NM_145691.2	583	atgaagcaccgagccactg	414694	-	-	-	-
20500	AUTL1	NM_032852.1	389	ctgaagctgagcagcaca	402034	-	-	-	-
20501	AUTL2	NM_052936.2	272	ctctctctatgcttctacac	405416	-	-	-	-
20502	AUTL4	NM_032885.4	369	aaacgcacgacgttaccaga	402431	-	-	-	-
20503	AYP1	NM_031153.2	608	aaatggttgagcttbaacttgc	398642	-	-	-	-
20504	A22	NM_022461.1	650	aaagc-clatctcatcatcgaa	382968	-	-	-	-
20505	B29	NM_031930.2	842	aaatctctctaaagctatctgag	397407	-	-	-	-
20506	B3GTL	NM_194318.1	625	tggatctcggctctacacaga	436810	-	-	-	-
20507	IT3	NM_173593.2	2015	aggtctacgagcttctctgag	426399	-	-	-	-
20508	B7-H4	NM_024821.1	717	atgtacgctacacacacacac	386231	-	-	-	-
20509	BAALC	NM_024812.1	581	tggacagagctgaagantctaca	390961	-	-	-	-
20510	BAAP3	NM_003933.3	2602	gtggcgcacatcgcgaatctagt	332289	-	-	-	-
20511	BANP	NM_017869.2	1427	cacgcacatcgaagctctcctacg	363320	-	-	-	-
20512	BARHL2	NM_020063.1	680	aagagcgcggaggttcctgagt	375570	-	-	-	-
20513	BASE	NM_173859.1	415	atgaagcctctccacagctaatat	428521	-	-	-	-
20514	BAT2	NM_004638.2	2274	gggtctctccctctgagcttct	332675	-	-	-	-
20515	BB03	NM_014417.2	782	cttgaggctcttgtaacatctcca	340559	-	-	-	-
20516	BBP	NM_032027.2	554	caacacacacacacacacacac	397646	-	-	-	-
20517	BB51	NM_024649.4	1266	ccgaagccgcgctttccctgag	388514	-	-	-	-
20518	BB54	NM_033028.2	48	gaatctccacagacatctcaatt	368240	-	-	-	-
20519	BB57	NM_018190.2	287	gaatctcatgagctgagctatg	403570	-	-	-	-
20520	BC002942	NM_033200.1	1525	ctgaagagagctgaacttccaga	403574	-	-	-	-
20521	BC008967	NM_033657.1	519	gaagatgaagctgaacttccaga	331914	-	-	-	-
20522	BCAS1	NM_018014.2	550	aaatctccagagctgaacttctg	365306	-	-	-	-
20523	BCL11A	NM_018014.2	550	aaatctccagagctgaacttctg	384705	-	-	-	-
20524	BCL11B	NM_022898.1	2201	cgagctctgcgcactcttgagag	434424	-	-	-	-
20525	BCL9L	NM_182855.1	1485	aaagcaccacacacacacacac	429708	-	-	-	-
20526	BCMP11	NM_176813.3	908	tggatgtaccctcttgtagag	425772	-	-	-	-
20527	BCNP1	NM_173544.2	1386	gcgcgcgcgcgcgcgcgcgcgc	381530	-	-	-	-
20528	BCOR	NM_017745.4	2837	caatctgctccacgaacactctca	439313	-	-	-	-
20529	BGALT15	NM_198540.1	1615	gtgctctccgcgcgcgcgcgcgc	410247	-	-	-	-
20530	BHD	NM_144606.3	777	cgagatctatagccatctgataaa	416440	-	-	-	-
20531	BHLHB5	NM_152414.2	965	agagctctgcgccttactcaaat	352752	-	-	-	-
20532	BIA2	NM_015431.2	1055	tggcttgcaagcgccttctctcca	393226	-	-	-	-
20533	BI0C1	NM_025044.2	1150	gaatctcaagcgcgcacacacac	386388	-	-	-	-
20534	BITE	NM_024491.1	894	tggatctccgaacactctataaaa	360923	-	-	-	-
20535	BIVM	NM_017693.2	1021	tgtatctccgaacactctataaaa	397417	-	-	-	-
20536	BLP1	NM_031940.2	55	aggttgcttgcgcgcgcgcgcgc	393971	-	-	-	-
20537	BLP2	NM_025141.2	608	gaaatgaagcgcgcgcgcgcgc	371783	-	-	-	-
20538	BM039	NM_018456.3	927	gtatctctgcctcttgagctctc	352623	-	-	-	-
20539	BNF1	NM_015424.3	1150	ctgctctccgcgcgcgcgcgcgc	407354	-	-	-	-
20540	BNPL	NM_138278.1	851	aaatcttgagcgcgcgcgcgcgc	392576	-	-	-	-
20541	BOMB	NM_024949.3	1201	cgagatgaagctcgcgcgcgcgcgc		-	-	-	-
									coreceptor

Alzheimer disease(アルツハイマー病)

diabetes(糖尿病)

diabetes(糖尿病)

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図46 (続き)

20542	BP75	NM_012107.1	244	tgagccctggatctatgtac	337484	-	-	-	-
20543	BR0BP	NM_086826.5	715	tgagccctggatctatgtac	408511	-	-	-	-
20544	BRX	NM_018321.2	790	tgagccctggatctatgtac	370321	-	-	-	-
20545	BRMS1	NM_032352.2	717	tgatcttgatcgctatata	399901	-	-	-	-
20546	BRN1	NM_015347.2	1419	tgatcttgatcgctatata	351738	-	-	-	-
20547	BSND	NM_051718.2	759	tgatcttgatcgctatata	408119	-	-	-	-
20548	BTLA	NM_181780.1	752	tgatcttgatcgctatata	433178	-	-	-	-
20549	BTN2A2	NM_008995.3	534	tgatcttgatcgctatata	336710	-	-	-	-
20550	BTN2A3	NM_024018.1	434	tgatcttgatcgctatata	385464	-	-	-	-
20551	BTN3A3	NM_008994.3	1751	tgatcttgatcgctatata	336704	-	-	-	-
20552	BTN1.2	NM_018602.1	966	tgatcttgatcgctatata	375443	-	-	-	-
20553	BVES	NM_007073.2	467	tgatcttgatcgctatata	338905	-	-	-	-
20554	BXMAS2-10	NM_145016.2	446	tgatcttgatcgctatata	412648	-	-	-	-
20555	G10orf12	NM_015652.2	3209	tgatcttgatcgctatata	354920	-	-	-	-
20556	G10orf23	NM_152843.3	1487	tgatcttgatcgctatata	419457	-	-	-	-
20557	G10orf24	NM_152709.2	2041	tgatcttgatcgctatata	419991	-	-	-	-
20558	G10orf25	NM_152022.1	248	tgatcttgatcgctatata	412802	-	-	-	-
20559	G10orf27	NM_152710.1	1292	tgatcttgatcgctatata	419938	-	-	-	-
20560	G10orf28	NM_014472.2	2031	tgatcttgatcgctatata	340737	-	-	-	-
20561	G10orf29	NM_152586.2	2188	tgatcttgatcgctatata	418273	-	-	-	-
20562	G10orf3	NM_018131.3	323	tgatcttgatcgctatata	367099	-	-	-	-
20563	G10orf30	NM_12915.1	245	tgatcttgatcgctatata	420577	-	-	-	-
20564	G10orf32	NM_144591.1	219	tgatcttgatcgctatata	410090	-	-	-	-
20565	G10orf36	NM_194298.1	1398	tgatcttgatcgctatata	436546	-	-	-	-
20566	G10orf39	NM_194303.1	230	tgatcttgatcgctatata	436675	-	-	-	-
20567	G10orf4	NM_145246.2	404	tgatcttgatcgctatata	413836	-	-	-	-
20568	G10orf42	NM_138357.1	677	tgatcttgatcgctatata	407591	-	-	-	-
20569	G10orf45	NM_031453.2	760	tgatcttgatcgctatata	397071	-	-	-	-
20570	G10orf46	NM_153810.2	1004	tgatcttgatcgctatata	423912	-	-	-	-
20571	G10orf5	NM_178816.2	151	tgatcttgatcgctatata	431374	-	-	-	-
20572	G10orf6	NM_018121.2	2130	tgatcttgatcgctatata	366895	-	-	-	-
20573	G10orf7	NM_012071.1	131	tgatcttgatcgctatata	337469	-	-	-	-
20574	G10orf10	NM_014206.1	188	tgatcttgatcgctatata	339970	-	-	-	-
20575	G10orf16	NM_020643.1	1379	tgatcttgatcgctatata	371840	-	-	-	-
20576	G10orf23	NM_018312.2	779	tgatcttgatcgctatata	370109	-	-	-	-
20577	G10orf24	NM_022438.1	611	tgatcttgatcgctatata	382596	-	-	-	-
20578	G10orf30	NM_020193.2	2263	tgatcttgatcgctatata	376006	-	-	-	-
20579	G10orf31	NM_017678.1	914	tgatcttgatcgctatata	360577	-	-	-	-
20580	G10orf9	NM_013278.1	76	tgatcttgatcgctatata	336640	-	-	-	-
20581	G12orf10	NM_021640.1	613	tgatcttgatcgctatata	381009	-	-	-	-
20582	G12orf22	NM_030609.1	1097	tgatcttgatcgctatata	395269	-	-	-	-
20583	G12orf4	NM_020374.2	385	tgatcttgatcgctatata	371701	-	-	-	-
20584	G13orf1	NM_020456.1	344	tgatcttgatcgctatata	377695	-	-	-	-

Barter syndrome(ハース-ター症候群)

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20585	C1:3orf12	NM_015932.2	337	cgattgaacgtctcttcattct	355504	-	-	-	-
20586	C1:3orf17	NM_018185.1	330	tgtcttaacgtgaagttcgaag	368156	-	-	-	-
20587	C1:3orf18	NM_025113.1	1348	tgtctgaatgactgaataagag	393701	-	-	-	-
20588	C1:3orf3	NM_145061.2	834	aaatgagtcgaataaccgaact	413384	-	-	-	see also 9770 line
20589	C1:3orf2	NM_024548.2	746	caatataagctgaaccaactac	387033	-	-	-	see also 8837 line
20590	C1:3orf9	NM_016075.1	922	ttgaacattgactcatgaatt	356203	-	-	-	see also 6852 line
20591	C1:4orf10	NM_016475.2	529	aaacgtctccacccatatacc	357680	-	-	-	see also 6872 line
20592	C1:4orf101	NM_017795.2	968	aaacagcagatctcatatcaaca	362858	-	-	-	-
20593	C1:4orf103	NM_018036.4	1174	agttgagagagagagatctctg	365654	-	-	-	-
20594	C1:4orf104	NM_018139.1	706	agttgataaacacagatctctg	367564	-	-	-	-
20595	C1:4orf105	NM_018168.1	457	tgtacttgccgcagatgaact	367688	-	-	-	-
20597	C1:4orf108	NM_018228.2	1789	aaagcacacaggaaacaaattt	368768	-	-	-	-
20597	C1:4orf11	NM_018453.2	389	agttactacgtatataattt	371775	-	-	-	-
20598	C1:4orf112	NM_015962.1	31	tcacacattgaagcgaatctctg	355638	-	-	-	-
20599	C1:4orf112	NM_016488.3	394	caaaagacctgaagcttagaca	357623	-	-	-	-
20600	C1:4orf115	NM_018228.1	2187	ctgcgcgtccacatactcatg	368708	-	-	-	-
20601	C1:4orf116	NM_018589.2	304	tagatctgcactcttggaat	372270	-	-	-	-
20602	C1:4orf118	NM_017926.2	990	agttacctactctctggaatg	364255	-	-	-	-
20603	C1:4orf119	NM_017924.2	192	agttccccaagctgaacgttcc	364054	-	-	-	see also 7178 line
20604	C1:4orf129	NM_016472.2	316	cggatgagtggtctatataact	357638	-	-	-	-
20605	C1:4orf132	NM_020215.1	480	aaagcatgactgctcttaatt	376242	-	-	-	-
20606	C1:4orf133	NM_022067.2	1489	atgattgtagacacctatacc	382007	-	-	-	see also 8260 line
20607	C1:4orf135	NM_022456.2	1274	ctggatatacgtattatcttc	383544	-	-	-	-
20608	C1:4orf138	NM_024558.1	329	aaactgctgaagatgaatttt	387261	-	-	-	-
20609	C1:4orf139	NM_024633.2	565	caaacgaagacaacactataa	386340	-	-	-	-
20610	C1:4orf140	NM_024643.1	755	ttaactgaatctcgaagctaga	388472	-	-	-	-
20611	C1:4orf141	NM_032035.1	822	ctacaacattgaagattgata	397673	-	-	-	-
20612	C1:4orf142	NM_032480.2	392	tgaactttctcttaattctta	400386	-	-	-	-
20613	C1:4orf147	NM_032883.1	218	aaagatattgacatctcttga	407450	-	-	-	see also 9592 line
20614	C1:4orf160	NM_024894.1	618	aaagattatgacatctgaatt	361666	-	-	-	-
20615	C1:4orf161	NM_024764.1	1879	cgatgattctggagatgaatt	390276	-	-	-	see also 8741 line
20616	C1:4orf162	NM_020181.1	346	taagcagctcatctgcgaatga	378834	-	-	-	-
20617	C1:4orf163	NM_016039.1	272	caagtcacacagatgaagaca	356075	-	-	-	-
20618	C1:4orf168	NM_031427.1	181	tgtcttaattggaagctttcca	396939	-	-	-	-
20619	C1:4orf169	NM_024644.1	1918	tgtctaacacagcttgatgata	388499	-	-	-	see also 8676 line
20620	C1:4orf24	NM_173607.2	445	ttgtctatagcccccagaagaa	432386	-	-	-	-
20621	C1:4orf29	NM_181533.3	634	ttgtgttgaagttataatata	420487	-	-	-	-
20622	C1:4orf32	NM_144578.2	230	agactccaacatttgataatc	409911	-	-	-	-
20623	C1:4orf34	NM_017949.1	1499	gaagatgattgaattacgaat	364661	-	-	-	-
20624	C1:4orf39	NM_174978.1	1771	caaacacttaactcaactttt	428884	-	-	-	see also 10136 line
20625	C1:4orf45	NM_025057.1	93	ctgacgaacacgaactagaga	393345	-	-	-	-
20626	C1:4orf48	NM_152777.2	761	aggtctatagctcaagatcc	421069	-	-	-	-
20627	C1:4orf49	NM_152592.2	2382	tacttgacgcgaactctctaac	419518	-	-	-	-
20628	C1:4orf50	NM_172365.1	886	aggaactctttctgaactaat	424427	-	-	-	-

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20629	C14orf64	NM_173526.1	686	aaatctcgaactactactctaac	425465	-	-	-
20630	C14orf68	NM_017791.1	1490	tctgtgtgcaactcttactcttg	362435	-	-	see also 7154 line
20631	C14orf69	NM_173461.3	389	agcaatcactctctctcatcc	428825	-	-	-
20632	C14orf8	NM_173463.3	557	agcttcctctctctctctctaac	428840	-	-	-
20633	C14orf9	NM_144566.1	377	acttgcagctccctctctctaac	409750	-	-	-
20634	C14orf93	NM_021944.1	1314	aaacacacagagagactctgact	381516	-	-	see also 8207 line
20635	C14orf94	NM_017815.1	1023	tctcctctctctctctctctaac	362861	-	-	-
20636	C15orf16	NM_130901.1	1038	aaagagccactctgtctgtgac	407142	-	-	-
20637	C15orf5	NM_030944.1	448	aggactctgaggcaagacatta	395651	-	-	-
20638	C16orf34	NM_144570.1	240	tgtctctctctctctctctaac	409767	-	-	-
20639	C17orf28	NM_030630.1	1238	aaacacagctctctctctctaac	394728	-	-	-
20640	C17orf31	NM_017575.3	817	ctgcctctcagctctctctgctt	359243	-	-	-
20641	C18orf10	NM_019107.1	218	agcaacaatactctgtctgtct	375235	-	-	-
20642	C19orf6	NM_034202.2	1271	tgtctctctcagcactctctaac	403876	-	-	-
20643	C19orf14	NM_030933.1	1223	actctcagctctctctctctaac	395556	-	-	-
20644	C19orf16	NM_014837.2	190	atctgttctacgttggttgata	344382	-	-	-
20645	C19orf19	NM_052965.1	170	agcaactcactctctctctctaac	405566	-	-	-
20646	C19orf21	NM_030906.2	700	tggtgttcggagtggttgatctaa	395221	-	-	see also 8952 line
20647	C19orf26	NM_017673.4	2845	aaagactctcactctctctctaac	360569	-	-	see also 7104 line
20648	C19orf27	NM_017847.2	891	atctcactctctctctctctaac	363050	-	-	see also 7161 line
20649	C19orf28	NM_024529.3	474	agctcaactctcagcaactctaac	386724	-	-	see also 8627 line
20650	C19orf29	NM_006820.1	807	aaacactctctctctctctctaac	336388	-	-	-
20651	C19orf35	NM_024319.2	340	tgactctcagagctctctctctaac	386251	-	-	-
20652	C19orf36	NM_183059.1	1423	aaatcaccactctctctctctaac	435578	-	-	-
20653	C19orf37	NM_138391.3	670	actctctcagcagctctctctaac	407937	-	-	see also 9609 line
20654	C19orf8	NM_014283.2	3307	agctcactctctctctctctctaac	340107	-	-	see also 5590 line
20655	C19orf1	NM_023825.2	2725	agctcagccctctctctctctaac	385361	-	-	-
20656	C19orf1	NM_030968.2	800	ccgcctctctcagctctctctaac	395895	-	-	-
20657	C19orf2	NM_031908.3	687	ccgcctctctcagctctctctaac	397250	-	-	-
20658	C19orf5	NM_015645.1	807	acgcctctcagcagctctctaac	354858	-	-	-
20659	C19orf6	NM_031910.3	690	actctcctcagctctctctctaac	397260	-	-	-
20660	C19orf7	NM_031911.3	866	atggcactcagctctctctctaac	397270	-	-	see also 9051 line
20661	C20orf108	NM_080821.1	554	ctctctctctctctctctctctaac	406785	-	-	-
20662	C20orf110	NM_021202.1	974	ctccacgcctctctctctctctaac	380753	-	-	see also 8137 line
20663	C20orf112	NM_080616.1	912	tcgtgtgtctctctctctctctaac	408449	-	-	-
20664	C20orf116	NM_023935.1	788	aggactctaaacagctctctctaac	385438	-	-	-
20665	C20orf12	NM_018152.2	1920	aaagcaatcagccctctctctaac	367787	-	-	-
20666	C20orf126	NM_030815.2	292	tgtttctctctctctctctctctaac	395289	-	-	-
20667	C20orf128	NM_178468.1	1280	ctccctctcaactctctctctaac	430822	-	-	-
20668	C20orf129	NM_030919.1	788	ctccactctctctctctctctctaac	395444	-	-	-
20669	C20orf132	NM_157033.1	1325	ctccactctctctctctctctctaac	417267	-	-	-
20670	C20orf133	NM_080616.2	164	aaagcaatcagccctctctctaac	406666	-	-	-
20671	C20orf140	NM_144628.1	795	aaagcaatcagccctctctctaac	410537	-	-	see also 9720 line
20672	C20orf141	NM_080739.1	339	aaagcaatcagccctctctctaac	406660	-	-	-

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20673	G20orf152	NM_080834.1	567	hgctcagcggctgataca	406830	-	-	-	-
20674	G20orf158	NM_132302.1	1407	gagaaatcgcttcaatgag	415434	-	-	-	-
20675	G20orf160	NM_080625.2	120	ctgcctatcgatccctttacc	405500	-	-	-	-
20676	G20orf172	NM_024913.2	634	cagagctcagcgcttctcagt	392139	-	-	-	-
20677	G20orf173	NM_080828.1	573	cgagcagacatcgcaataacc	406799	-	-	-	-
20678	G20orf175	NM_080829.1	1255	cagtgagaccgcttgatcaga	406809	-	-	-	-
20679	G20orf185	NM_182658.1	1259	acgagtcgctttgaagaatgg	434867	-	-	-	-
20680	G20orf186	NM_182519.1	181	ggagagcaatacgtattgtga	434074	-	-	-	-
20681	G20orf19	NM_018474.2	1549	tgcgcctgctcagcatattaca	371993	-	-	-	-
20682	G20orf20	NM_018270.3	306	ctgctagctctgagctttccc	369603	-	-	-	-
20683	G20orf21	NM_017799.2	528	aggagaccctcgatcttcaccc	362590	-	-	-	-
20684	G20orf24	NM_018840.1	419	aggagctctgactcttactcca	372955	-	-	-	-
20685	G20orf28	NM_015417.2	275	atgcttgagatgcacaattagt	352362	-	-	-	-
20686	G20orf29	NM_018347.1	394	aggcagcagacgaactatctcg	370561	-	-	-	-
20687	G20orf32	NM_020356.1	2221	ggagcagaccccgcttactcca	376851	-	-	-	-
20688	G20orf38	NM_018327.1	236	ggagcagaccccttcattatctg	370413	-	-	-	-
20689	G20orf4	NM_015511.2	519	ggagcctctgctatgctttcttc	353648	-	-	-	-
20690	G20orf40	NM_0144703.1	679	ctctctcaaacctgaactcaaaa	411496	-	-	-	-
20691	G20orf43	NM_016407.1	73	ggctttcagcaggagaaatccc	357394	-	-	-	-
20692	G20orf44	NM_018244.2	684	ggctttcagcaggagaaatccc	368982	-	-	-	-
20693	G20orf45	NM_016045.1	548	ggctttcagcaggagaaatccc	356006	-	-	-	-
20694	G20orf55	NM_031424.3	835	ggagcccgagacgaactgaatgg	396926	-	-	-	-
20695	G20orf6	NM_018643.3	1149	ggagcccgagacgaactgaatgg	359727	-	-	-	-
20696	G20orf65	NM_176791.2	454	agctatcatgacgctttcttaca	429511	-	-	-	-
20697	G20orf67	NM_022104.2	753	ggatctctccctcgagaaatcac	382308	-	-	-	-
20698	G20orf7	NM_024120.2	251	cgagtcgagacgctgctatgg	386112	-	-	-	-
20699	G20orf72	NM_059865.2	319	ggagccgctctgcttcttandaca	430809	-	-	-	-
20700	G20orf71	NM_059865.2	319	ggagccgctctgagcaatbagc	404516	-	-	-	-
20701	G20orf81	NM_022760.3	1710	cgagggatgcacgctatgtccc	383991	-	-	-	-
20702	G20orf86	NM_080674.1	631	aggagcttctgctctctatgt	406662	-	-	-	-
20703	G20orf9	NM_016004.1	1319	atcacctcgatcacagtgaaaca	355815	-	-	-	-
20704	G20orf92	NM_053041.1	449	cgagtcgagcggctttcttacaac	405822	-	-	-	-
20705	G20orf100	NM_145033.1	91	tgctgtctcccaagaatcatat	412993	-	-	-	-
20706	G20orf121	NM_196078.1	339	tgctgtctcccaagaatcatat	432985	-	-	-	-
20707	G20orf125	NM_194309.1	369	ggagcttgcacaaagatctgggc	436684	-	-	-	-
20708	G20orf128	NM_152507.1	249	ggagcagcagcttgcattctaac	417313	-	-	-	-
20709	G20orf129	NM_152506.1	544	ggagcagcagcttgcattctaac	417310	-	-	-	-
20710	G20orf18	NM_017438.1	885	ctgttaccgctctcagatcatc	358842	-	-	-	-
20711	G20orf42	NM_058184.1	474	tgaagatttcccaaggatttaag	406209	-	-	-	-
20712	G20orf56	NM_032261.3	384	gagagcagctactactaatgaga	399103	-	-	-	-
20713	G20orf69	NM_056189.1	432	tgtagctctcgatcagaagccc	409216	-	-	-	-
20714	G20orf7	NM_020152.2	596	ctgagcccaagaatctctactgt	378271	-	-	-	-
20715	G20orf70	NM_058190.1	155	aggagcttgccttctacacacc	406217	-	-	-	-

molecular_function

unknown

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20116	C21orf77	NM_018277.1	221	acgaactctctcgaagaactatct	386938	-	-	-	-
20117	C21orf80	NM_015277.2	1106	cgaagctcttcgaattattgacc	350122	-	-	-	-
20118	C21orf84	NM_153752.1	270	aagcccgatggaaagatgtct	423881	-	-	-	-
20119	C21orf86	NM_153454.1	685	cgcgaagatcgcgactgtttcga	423283	-	-	-	-
20120	C21orf88	NM_153754.1	365	gtcttgaattatgaagcaatga	423887	-	-	-	-
20121	C21orf90	NM_153204.1	749	caagctcaattgtbaactgaatga	420368	-	-	-	-
20122	C22orf18	NM_024063.2	390	aagctgacacacacactccaag	385653	-	-	-	-
20123	C22orf19	NM_030878.2	1337	ctctcttttgaagcctattgctct	331980	-	-	-	-
20124	C22orf4	NM_013466.1	1082	gttgaatcctgaagctattcaat	340253	-	-	-	-
20125	C2orf11	NM_144629.1	700	gtgtgcctatggctgtgaatt	410555	-	-	-	-
20126	C2orf3	NM_003203.2	2097	ctgctaantgtbaectttattat	331294	-	-	transcription, regul	RNA polymerase II
20127	C2orf5	NM_153516.1	109	ctctctatgagcagctactatcc	417450	-	-	or	transcription factor
20128	C2orf6	NM_013221.1	246	aggatctcatcattgaagactct	388566	-	-	-	-
20129	C2orf9	NM_032309.2	282	gcgaagctgcaactcaactaaga	398642	-	-	-	-
20130	C3F	NM_006788.4	175	ctgcttgatgactattacactgc	334224	-	-	-	-
20131	C3orf6	NM_174908.2	1003	gtctcttatgcgattattactat	428608	-	-	-	-
20132	C4A4	NM_014000.1	452	gcctgcacccgcagctaataga	340532	-	-	-	-
20133	C4orf7	NM_152997.1	143	gtcaacagctgaattagcttca	421760	-	-	-	-
20134	C4orf8	NM_003704.1	2959	aagcgaacagctcaagcaag	332032	-	-	-	-
20135	C5orf7	NM_016804.2	4321	atgtctgctatccactactct	356326	-	-	-	-
20136	C6orf10	NM_006781.2	504	ctgtctgctcaagctattgtag	336330	-	-	see also 6947 line	-
20137	C6orf102	NM_145027.2	222	caagcttaacctgctgacaaca	412860	-	-	-	-
20138	C6orf105	NM_032744.1	119	ctgtatactttctcattatt	401308	-	-	-	-
20139	C6orf107	NM_017754.2	1313	cgcgaagatgcgtttgaactatt	361724	-	-	-	-
20140	C6orf109	NM_015388.1	248	agcctatgcttcgaagatgtag	352176	-	-	-	-
20141	C6orf111	NM_032870.1	2034	gaagaaatcaatcaatgaatgaa	402372	-	-	-	-
20142	C6orf113	NM_145062.1	1712	aagtcacaaatcgctctatttt	413456	-	-	see also 9771 line	-
20143	C6orf117	NM_138408.1	191	atctccgcagcaggtttatttct	407988	-	-	-	-
20144	C6orf118	NM_144980.1	234	cgactctggatggatgattctca	412270	-	-	-	-
20145	C6orf125	NM_032340.1	220	ttgcgcgctctctcaactaac	398519	-	-	-	-
20146	C6orf128	NM_145316.2	111	tgctctgagatcattctctctc	414412	-	-	-	-
20147	C6orf130	NM_145063.2	393	ttgcgcgctatctattctcttg	413468	-	-	-	-
20148	C6orf134	NM_024906.1	409	ttgcgcgctggcggagactctcc	391968	-	-	see also 8803 line	-
20149	C6orf138	NM_145029.1	1157	ttgtgcgctatctctgataaac	412887	-	-	-	-
20150	C6orf141	NM_153344.1	824	ggacttgctctgaggaataaa	422844	-	-	-	-
20151	C6orf142	NM_138569.1	161	aagcatcaccaacctactcagt	408450	-	-	-	-
20152	C6orf146	NM_173563.1	1110	ttgtcttgatttgcactta	426153	-	-	-	-
20153	C6orf148	NM_030568.2	686	aggacagagctctctctctca	394629	-	-	-	-
20154	C6orf150	NM_138441.1	720	ctgaacaccggagactacttga	408194	-	-	-	-
20155	C6orf151	NM_152551.2	776	aagttgcttgctgtgataaat	418022	-	-	-	-
20156	C6orf152	NM_187714.1	1438	aagagatgacagcgtatataca	432953	-	-	-	-
20157	C6orf153	NM_033112.1	195	ttggagctaaagcgtacaaaca	403353	-	-	-	-
20158	C6orf155	NM_024882.1	566	tcgtatctgcaggtgactttct	391646	-	-	-	-

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20759	C6orf182	NM_020425.3	114	aaatgagctgcaacacacacttatt	377415	-	-	-	-
20760	C6orf165	NM_178823.2	277	ttatctatctgagcttattgata	431870	-	-	-	-
20761	C6orf166	NM_018064.2	1074	aaatttccatctcaatcaaat	368036	-	-	-	-
20762	C6orf167	NM_184688.1	416	caaacacctaattgacttatttt	438231	-	-	-	-
20763	C6orf168	NM_03251.1	1201	aaacacacacacacacacacac	400500	-	-	-	-
20764	C6orf170	NM_152730.2	626	ttcttcgctccatctattctgac	420193	-	-	-	-
20765	C6orf18	NM_019059.2	1157	ttcttcgctccatctattctgac	420193	-	-	-	-
20766	C6orf182	NM_178330.3	1418	aaagacagcttccatctattctgac	428444	-	-	-	-
20767	C6orf182	NM_153711.1	861	ctctcgatctcaatctgacttccc	428357	-	-	-	-
20768	C6orf192	NM_032351.1	210	ttcttcgctccatctattctgac	404270	-	-	-	-
20769	C6orf195	NM_152554.1	879	caaaagagatctgacaaagac	418072	-	-	-	-
20770	C6orf203	NM_016487.2	213	aaatttccatctcaatcaaat	357818	-	-	-	-
20771	C6orf206	NM_152732.2	132	aaagcagctacacacacacacac	420245	-	-	-	-
20772	C6orf210	NM_020381.2	755	ttcttcacatctgagatgaaat	377326	-	-	-	-
20773	C6orf211	NM_024573.1	1298	caagttgcactgacttattctg	387406	-	-	-	-
20774	C6orf25	NM_025260.2	368	tggagacaggaactctgcaag	394621	-	-	-	-
20775	C6orf27	NM_025258.1	1361	gaactcgtcttgcgactctgtcc	394615	-	-	-	-
20776	C6orf29	NM_025257.1	809	ggagatcaatcgactctattgaca	394585	-	-	-	-
20777	C6orf32	NM_015864.2	839	aaatgaagtagatgaactctatg	355269	-	-	-	-
20778	C6orf37	NM_017633.1	1168	agagagagcgcctctaaagact	359787	-	-	-	-
20779	C6orf55	NM_016485.3	710	caagttgtatcaaatatactatc	357788	-	-	-	-
20780	C6orf56	NM_014721.1	1767	ctcgatttatcaacgactatctaga	342868	-	-	-	-
20781	C6orf60	NM_024581.3	2851	ttttacagctataatactatca	387522	-	-	-	-
20782	C6orf62	NM_030439.2	809	caactcactctctctcactatca	395634	-	-	-	-
20783	C6orf64	NM_018322.1	447	gaactcactctctctcactatca	370330	-	-	-	-
20784	C6orf65	NM_152731.1	535	caagcactctctctctctctctt	420235	-	-	-	-
20785	C6orf69	NM_173662.3	894	aaagcactctctctctctctctt	428107	-	-	-	-
20786	C6orf74	NM_016065.1	340	ttcttcgctccatctattctgac	358173	-	-	-	-
20787	C6orf75	NM_021820.1	122	ttcttcgctccatctattctgac	381041	-	-	-	-
20788	C6orf78	NM_024807.1	1073	aaagcagctctctctctctctct	390835	-	-	-	-
20789	C6orf78	NM_153036.1	429	aaagcagctctctctctctctct	422016	-	-	-	-
20790	C6orf81	NM_145028.3	413	cttgcgactctctctctctctct	412873	-	-	-	-
20791	C6orf82	NM_015921.1	619	aaatggcagctctctctctctct	355492	-	-	-	-
20792	C6orf83	NM_145169.1	470	aaatggcagctctctctctctct	413549	-	-	-	-
20793	C6orf84	NM_014895.1	1901	aaagctctctctctctctctct	345330	-	-	-	-
20794	C6orf89	NM_152734.1	1015	ttcttcgctccatctattctgac	420264	-	-	-	-
20795	C6orf93	NM_032860.3	1221	aaatggcagctctctctctctct	402156	-	-	-	-
20796	C6orf96	NM_017908.1	192	aaatggcagctctctctctctct	363843	-	-	-	-
20797	C6orf97	NM_025059.2	123	aaatggcagctctctctctctct	393382	-	-	-	-
20798	C7orf11	NM_138701.1	511	caatctctctctctctctctct	408606	-	-	-	-
20799	C7orf13	NM_032825.1	797	ttcttcgctccatctattctgac	401417	-	-	-	-
20800	C7orf19	NM_032831.1	156	ctccacacacacacacacacac	401808	-	-	-	-
20801	C7orf2	NM_022458.2	206	ttcttcgctccatctattctgac	382906	-	-	-	-

Alzheimer disease (アルツハイマー病)

molecular_function

unknown

see also 6879 line

see also 8872 line

channel

see also 6571 line

see also 9322 line

see also 7171 line

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図 46 (続き)

20802	C1orf20	NM_015940.2	451	ctgacgcgtacactttatctcc	355597	-	-	-	-
20803	C1orf22	NM_031443.2	113	ctgagatgctgcgcattttaa	397026	-	-	-	-
20804	C1orf23	NM_024315.2	453	tggatcagctgcgcagctcttga	338241	-	-	-	-
20805	C1orf24	NM_024051.2	433	tggatgctgctctctctctctga	385650	-	-	-	-
20806	C1orf25	NM_024054.1	1148	ctctgctgctgcgcagctaat	385673	-	-	-	-
20807	C1orf26	NM_024057.2	1116	tggcgcgcgcgcacattctctcc	385718	-	-	-	-
20808	C1orf27	NM_152745.1	462	tggcgcgcgcgcacattctctcc	420309	-	-	-	-
20809	C1orf28B	NM_198097.1	510	agctgcgcgcgcgcacattctcc	437028	-	-	-	-
20810	C1orf31	NM_145304.2	1557	agctgcgcgcgcgcacattctcc	409167	-	-	-	-
20811	C1orf34	NM_178829.2	517	agctgcgcgcgcgcacattctcc	414270	-	-	-	-
20812	C1orf34	NM_178829.2	442	agctgcgcgcgcgcacattctcc	431978	-	-	-	-
20813	C1orf35	NM_032936.2	397	atgctgcgcgcgcgcacattctcc	402559	-	-	-	-
20814	C1orf35	NM_034029.1	1564	gucgcgcgcgcgcgcacattctcc	408010	-	-	-	-
20815	C1orf35	NM_175076.1	1087	tatgctgcgcgcgcgcacattctcc	429006	-	-	-	-
20816	C1orf37	NM_020237.1	1252	ccctcctatgacaaagcttgg	378406	-	-	-	-
20817	C1orf37	NM_014612.2	1278	ccctcctatgacaaagcttgg	341108	-	-	-	-
20818	C1orf23	NM_148178.1	227	ctctgcgcgcgcgcacattctcc	415121	-	-	-	-
20819	C1orf24	NM_032596.3	952	atcactgctctctctctctctcc	400990	-	-	-	-
20820	C1orf25	NM_147202.1	889	aagcgcgcgcgcgcacattctcc	415118	-	-	-	-
20821	C1orf26	NM_033439.1	536	agctgcgcgcgcgcacattctcc	404078	-	-	-	-
20822	C1orf34	NM_017948.3	1903	agctgcgcgcgcgcacattctcc	364611	-	-	-	-
20823	C1orf37	NM_032837.2	837	cagcgcgcgcgcgcacattctcc	402570	-	-	-	-
20824	C1orf41	NM_152420.1	890	ctctcctgcgcgcgcacattctcc	416517	-	-	-	-
20825	C1orf45	NM_030814.3	844	attctcctgcgcgcgcacattctcc	395293	-	-	-	-
20826	C1orf46	NM_018485.1	447	tgtctcctgcgcgcgcacattctcc	371892	-	-	-	-
20827	C1orf48	NM_194313.1	1323	cagcgcgcgcgcgcacattctcc	438711	-	-	-	-
20828	C1orf54	NM_032803.2	544	ctctgcgcgcgcgcgcacattctcc	401598	-	-	-	-
20829	C1orf7	NM_017586.1	237	ccgcgcgcgcgcgcgcacattctcc	353367	-	-	-	-
20830	C1orf2	NM_033415.2	205	tggcgcgcgcgcgcgcacattctcc	403982	-	-	-	-
20831	CAONB3	NM_000725.2	874	agcgcgcgcgcgcgcacattctcc	329864	-	-	-	-
20832	Pha	NM_018584.4	556	gacgcgcgcgcgcgcacattctcc	372264	-	-	-	-
20833	C1orf22	NM_015093.2	2680	ccctcctgcgcgcgcacattctcc	348025	-	-	-	-
20834	C1orf23	NM_198947.1	1301	tggcgcgcgcgcgcgcacattctcc	440177	-	-	-	-
20835	C1orf30	NM_014810.2	7102	agcgcgcgcgcgcgcacattctcc	344091	-	-	-	-
20836	C1orf31	NM_144891.2	554	ctctgcgcgcgcgcgcacattctcc	411329	-	-	-	-
20837	C1orf34	NM_020764.1	816	ctctgcgcgcgcgcgcacattctcc	378602	-	-	-	-
20838	C1orf35	NM_020753.1	1179	ctctgcgcgcgcgcgcacattctcc	378541	-	-	-	-
20839	C1orf38	NM_012115.2	3534	atgcgcgcgcgcgcgcacattctcc	337612	-	-	-	-
20840	C1orf38	NM_015576.1	3062	agcgcgcgcgcgcgcacattctcc	354236	-	-	-	-
20841	C1orf38	NM_024811.1	1475	agcgcgcgcgcgcgcacattctcc	391041	-	-	-	-
20842	C1orf2	NM_182511.2	913	tgcgcgcgcgcgcgcacattctcc	434039	-	-	-	-
20843	C1orf2	NM_080617.3	491	ctctcctgcgcgcgcacattctcc	409457	-	-	-	-

Alzheimer disease(アルツハイマー病)

voltage-gated calcium channel

channel

kinase related

see also 6236 line

see also 6436 line

see also 8157 line

see also 9516 line

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図 46 (続き)

							channel, receptor activity, signal transduction	nicotinic acetylcholine- selective channel
20882	CHRG	NM_005199.3	1369	cagcagatcacttctcaacagg	333565	-	-	-
20883	CHSY1	NM_014916.3	2375	acctgcacgtctgtttatcaaa	345660	-	-	-
20884	cis	NM_080657.3	938	atgaataatgacgtttctcaac	406556	-	-	-
20885	CIRH1A	NM_032930.1	1258	tggagacatctctacgttttc	401782	-	-	-
20886	CTED4	NM_133467.2	609	cgacatgacgcgcgaactatcg	407233	-	transcription_regulat or	-
20887	CKAP-2	NM_018204.2	1468	aagctgttaagtctttgtatgag	368403	-	-	-
20888	CRIP-1	NM_016274.3	1062	aagctgcgcctctctggaagag	358663	-	-	-
20889	CKLFSF8	NM_178866.3	454	ctgtgtatgacgtctttcttctg	432048	-	-	-
20890	CL25022	NM_015702.1	898	acgtctacgcacattttagctct	355202	-	-	-
20891	CLASP1	NM_015282.1	2580	aacttcaaacgcgaagagattag	350965	-	-	-
20892	CLIP-2	NM_153221.1	2891	gggttcacagagattatagttcc	422268	-	-	-
20893	CLPR-59	NM_015526.1	1028	aagttcacgtctcccaactatga	353710	-	-	-
20894	CLONE250					-	-	-
20894	03	NM_015381.1	429	aaggtctgcgactttgttaataac	351952	-	-	-
20895	QLST1124	NM_016438.2	475	taagttctgtttatcaacaattgac	357477	-	-	-
20896	CMIP	NM_030629.1	1877	ctctgcgcgacgacctcaataac	394716	-	-	-
20897	CM166	NM_032869.2	663	cttgtatttggtctactatcagaa	402256	-	see also 9325 line	-
20898	CMRF-	NM_007261.1	892	cpctgtattgtttatctcaaaccc	337364	-	-	-
20899	CM1482	NM_030962.1	3451	aaacatacagcttttagtttta	395807	-	see also 8980 line	-
20900	CMYA1	NM_194293.2	2657	ggacacacctatatactaaagag	436469	-	-	-
20901	CMYA3	NM_152381.2	3729	aagagacactctatctatcaaa	416008	-	-	-
20902	CMYA4	NM_173167.1	661	tttgcagataaccgaactctag	424782	-	-	-
20903	CMYA5	NM_153610.2	1610	tttgcagaccttttagctatgac	424343	-	-	-
20904	CNAP1	NM_153610.2	1610	tttgcagaccttttagctatgac	424343	-	see also 5064 line	-
20904	CNAP1	NM_014865.1	1482	tttgcagaccttttagctatgac	344973	-	-	-
20905	CNAP1	NM_020348.1	516	tttgcagaccttttagctatgac	376801	-	-	-
20906	CNNA4	NM_020184.1	848	tttgcagaccttttagctatgac	376801	-	see also 7789 line	-
20907	CNO	NM_018366.2	828	tttgcagaccttttagctatgac	376801	-	-	-
20908	CNO110	NM_018442.1	1231	tttgcagaccttttagctatgac	376801	-	see also 6418 line	-
20909	CNO13	NM_014516.1	2208	tttgcagaccttttagctatgac	340819	-	see also 5745 line	-
20910	CNO16L	NM_144571.1	193	tttgcagaccttttagctatgac	409775	-	see also 9683 line	-
20911	CNTN4	NM_175607.1	2711	tttgcagaccttttagctatgac	429132	-	see also 10145 line	-
20912	CNTN5	NM_014361.2	1314	tttgcagaccttttagctatgac	340290	-	-	-
20913	COBL	NM_015198.2	627	tttgcagaccttttagctatgac	349656	-	-	-
20914	COBRA1	NM_015456.2	1157	tttgcagaccttttagctatgac	353234	-	transcription_regulat or	-
20915	COH1	NM_015243.2	222	tttgcagaccttttagctatgac	350163	-	-	-
20916	COL13A1	NM_005203.3	2031	aaggagaccttgatgaactcagg	333576	-	see also 3655 line	-
20917	COL23A1	NM_173465.2	851	aaggagaccttgatgaactcagg	424842	-	-	-
20918	COL24A1	NM_152890.4	369	caactcagcttgatgaactcagg	421436	-	-	-
20919	COL25A1	NM_032518.2	1661	aaggagaccttgatgaactcagg	400519	-	-	-

図46 (続き)

[illegible]

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圖 46 (續)

20961	OCYP26C1	NM_183374.1	789	gagtgagctccctgagctcaata	435668	-	-	-	-
20962	OC1G	NM_015522.2	218	gagagagagagagagctatcttc	355862	-	-	-	-
20963	ONS2634E	NM_012135.1	253	gagatcttgagctatctgagcgc	337661	-	-	-	-
20964	DAB2P	NM_032552.1	1994	cgccgcgcgcgcgcgcgcgcgc	400978	-	-	-	-
20965	DARP	NM_144994.5	777	gagcgcgcgcgcgcgcgcgcgc	412305	-	-	-	-
20966	DATF1	NM_022105.2	2017	gtgagcgcgcgcgcgcgcgcgc	382388	-	-	-	-
20967	DBG-1	NM_021174.4	1628	gcgccttgccgcgcgcgcgcgc	380571	-	-	-	-
20968	DBG1	NM_014618.1	2508	tgagatcttgagcgcgcgcgcgc	341363	-	-	-	-
20969	DBCCRIL	NM_198051.1	2508	atgacgcgcgcgcgcgcgcgcgc	440719	-	-	-	-
20970	DC-USP	NM_152277.1	342	tgacgcgcgcgcgcgcgcgcgc	415300	-	-	-	-
20971	DC12	NM_020187.1	392	tcgttgatctgcgcgcgcgcgcgc	375876	-	-	-	-
20972	DC3	NM_020188.1	214	atgcacgcgcgcgcgcgcgcgc	375884	-	-	-	-
20973	DC8	NM_020189.4	137	aaagagagcgcgcgcgcgcgcgc	375888	-	-	-	-
20974	DCLRE1A	NM_014881.1	2453	gttgacgcgcgcgcgcgcgcgc	345177	-	-	-	-
20975	DCLRE1B	NM_022836.2	234	tgacgcgcgcgcgcgcgcgcgc	384481	-	-	-	-
20976	DCLRE1C	NM_022487.1	1863	gtgcgcgcgcgcgcgcgcgcgc	383424	-	-	-	-
20977	DCNPI1	NM_130848.1	847	tgctctgcgcgcgcgcgcgcgc	407097	-	-	-	-
20978	DCOHM	NM_032151.2	88	tgagctgcgcgcgcgcgcgcgc	398382	-	-	-	-
20979	DCP1B	NM_152840.3	395	cgagctgcgcgcgcgcgcgcgc	419427	-	-	-	-
20980	DCP2	NM_152842.3	1353	cgagctgcgcgcgcgcgcgcgc	419138	-	-	-	-
20981	DDA3	NM_032856.4	635	gagagagagagagagagagagag	401159	-	-	-	-
20982	DDX27	NM_017895.6	342	cgagctgcgcgcgcgcgcgcgc	433900	-	-	-	-
20983	DEAD01	NM_182563.1	752	cgagctgcgcgcgcgcgcgcgc	408447	-	-	-	-
20984	DEPC-1	NM_139178.1	1220	cgagctgcgcgcgcgcgcgcgc	435447	-	-	-	-
20985	DEPP6	NM_015362.2	153	gtgagctgcgcgcgcgcgcgcgc	351823	-	-	-	-
20986	DEX1	NM_014015.3	648	tcgagctgcgcgcgcgcgcgcgc	339145	-	-	-	-
20987	DIBD1	NM_024740.1	217	tgagctgcgcgcgcgcgcgcgc	389772	-	-	-	-
20988	DIP13B	NM_018171.2	1556	tgagctgcgcgcgcgcgcgcgc	367954	-	-	-	-
20989	DIRC1	NM_052952.1	503	tgagctgcgcgcgcgcgcgcgc	405002	-	-	-	-
20990	DIRC2	NM_032839.1	787	gagcgcgcgcgcgcgcgcgcgc	407886	-	-	-	-
20991	DISP2	NM_033510.1	2822	cgagcgcgcgcgcgcgcgcgcgc	404048	-	-	-	-
20992	DJ1042K1	NM_015705.3	202	cgagctgcgcgcgcgcgcgcgc	355213	-	-	-	-
20993	DJ1220B.2	NM_020466.3	206	gtgcgcgcgcgcgcgcgcgcgc	377728	-	-	-	-
20994	DJ167A19	NM_018982.3	778	gagagagagagagagagagagag	374001	-	-	-	-
20995	DJ465N24	NM_020317.2	494	acgagctgcgcgcgcgcgcgcgc	378483	-	-	-	-
20996	DJ667H12	NM_019805.2	922	tgagctgcgcgcgcgcgcgcgc	375489	-	-	-	-
20997	DJ79P11.1	NM_032621.1	113	gagagagagagagagagagagag	401124	-	-	-	-

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図46 (続き)

20998	DKFZa313 N0621	NM.178286.1	1101	carcccaattgacacttgaaga	428428	-	-	-
20999	DKFZp434 A1022	NM.021185.3	2001	tggatggcgaacacaaacaga	380688	-	-	-
21000	DKFZp434 A1315	NM.032132.2	256	atgacctatgzaacagatato	398050	-	-	-
21001	DKFZp434 A1319	NM.032140.1	878	ttgagattcatctdcaaatgc	398323	-	-	-
21002	DKFZp434 A1721	NM.017609.2	1802	ttcttgatgaaggacattto	359421	-	-	-
21003	DKFZp434 B0335	NM.015395.1	3472	ctggagtgatgcacaanaatgc	352217	-	-	-
21004	DKFZp434 B0417	NM.013377.2	2287	gcgcctgcctgctgacttga	338897	-	-	-
21005	DKFZp434 B1231	NM.178275.3	2045	gttgcgcagggcctgcaatga	430691	-	-	-
21006	DKFZp434 B188	NM.015434.1	830	caatctcatctttgttgataga	352788	-	-	-
21007	DKFZp434 B227	NM.032263.2	1816	tggatggcgaagcaatgatagc	399134	-	-	-
21008	DKFZp434 C0328	NM.017577.1	2142	aagatcaggccatctttaaag	359337	-	-	-
21009	DKFZp434 C171	NM.015621.1	1111	ctgacatttgcataaaggaga	354618	-	-	-
21010	DKFZp434 C1714	NM.152834.2	303	atgagcgcgcggagtaactgg	421377	-	-	-
21011	DKFZp434 C245	NM.015428.2	563	ggaaatgtgtccctctgtatgt	352631	-	-	-
21012	DKFZp434 D1335	NM.015578.1	225	ccgacagatgctccaaaccacc	354295	-	-	-
21013	DKFZp434 D146	NM.015595.2	289	gagcccaacaggatttaatta	354361	-	-	-
21014	DKFZp434 E2220	NM.017612.2	381	tggatgaagctactaaagtga	359537	-	-	-
21015	DKFZp434 F0318	NM.030817.1	325	ccgattctctgctgctctctgc	395345	-	-	-
21016	DKFZp434 F1017	NM.032135.2	345	aactaccatctatttggttaat	398196	-	-	-
21017	DKFZp434 F1719	NM.032248.1	366	tggatgtctagtggtgagaacc	399010	-	-	-
21018	DKFZp434 F2021	NM.015412.1	1216	aagcaaacggcttaaacatctgg	352324	-	-	-
21019	DKFZp434 G0522	NM.017566.2	637	aagtacacagggttatctatctaat	359124	-	-	-

see also 7049 line

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図 46 (続き)

21020	DKFZp434	GM625	NM_0181775.2	574	ggccgcctcaatcgagttaccacag	433142	-	-	-
21021	DKFZp434	G072	NM_032148.1	988	ttccgagatgaaccgttaacct	398374	-	-	-
21022	DKFZp434	G118	NM_032286.1	538	ggctcctcttccaaacagatt	399173	-	-	-
21023	DKFZp434	G156	NM_022742.2	2633	ggaaactgtctcgaagacttttga	383818	-	-	-
21024	DKFZp434	H0115	NM_031421.1	170	gaacttcagcaagcgtctttacc	390894	-	-	-
21025	DKFZp434	H0820	NM_022833.1	510	atcctgctcactactactctgc	384480	-	-	-
21026	DKFZp434	H2010	NM_032129.1	1366	ctgaaccaactctggaaacntca	397953	-	-	-
21027	DKFZp434	H2215	NM_017559.1	313	ttcttgaaccctcaaatatgc	359030	-	-	-
21028	DKFZp434	099	NM_032269.3	1476	aggacttcaagtctaccatatt	399240	-	-	-
21029	DKFZp434	1020	NM_194295.1	211	aggacttgaagaagttagtgctg	436501	-	-	-
21030	DKFZp434	1916	NM_032245.1	403	aggaaactgtctcttcacttttc	399008	-	-	-
21031	DKFZp434	J0113	NM_032130.1	2271	aagcgtatcaacctatcaaatc	397968	-	-	-
21032	DKFZp434	J046	NM_015871.2	1045	aagctgaagccactcttcaac	354962	-	-	-
21033	DKFZp434	J154	NM_015810.1	700	gtgtgcgtctcaatcacacag	354597	-	-	see also 6509 line
21034	DKFZp434	K1172	NM_031280.1	369	catattctccagaagaactaa	396524	-	-	-
21035	DKFZp434	K1421	NM_032141.1	1601	aagctgaacactgaagaactgt	398351	-	-	-
21036	DKFZp434	K1815	NM_152892.1	512	aggatgtctctcaacttactct	421501	-	-	-
21037	DKFZp434	K2435	NM_032256.1	691	ctgaactctgtgttacttgt	399042	-	-	-
21038	DKFZp434	L0117	NM_022778.2	767	catcaacagtgaagtgtgaca	384143	-	-	see also 8469 line
21039	DKFZp434	L0718	NM_032139.1	770	gaatatactgtccatctgaat	398280	-	-	-
21040	DKFZp434	L0850	NM_017558.1	2926	aggacttggatccacagtct	359068	-	-	see also 7032 line
21041	DKFZp434	L142	NM_016813.4	1801	atgcacacgggttcgaagtta	358430	-	-	-

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図46 (続き)

21042	DKFZP434 L1717	NM_032136.3	1586	ttgtctccacacagtgctcaatga	398257	-	-	-
21043	DKFZa434 M202	NM_182499.1	503	gawtaaccacccaggagattatgg	433967	-	-	-
21044	DKFZP434 N035	NM_032262.1	288	ctgcaacacacagctccagattgtcc	399105	-	-	-
21045	DKFZP434 N1415	NM_032133.2	101	agagttccctccctccagataaact	398098	-	-	-
21046	DKFZP434 O047	NM_015594.1	2877	aagggaatcaagtgctcctttatc	354353	-	-	-
21047	DKFZa434 O0527	NM_194302.1	2109	tgggtctacaacccccacattatgg	436658	-	-	-
21048	DKFZP434 P0316	NM_032134.1	1231	ttgctctcgtctccatacaaatgg	398149	-	-	-
21049	DKFZa434 P055	NM_173466.1	1321	ttgtcagctaaagtcggaataatgc	424866	-	-	-
21050	DKFZa451 M2119	NM_182585.1	3329	aaattctgttagctcttaaacata	434523	-	-	-
21051	DKFZb547 A023	NM_018704.1	1020	tacccctaatgacatcttgaaga	372706	-	see also 7571 line	-
21052	DKFZb547 B1713	NM_152379.1	284	gaacacctccagctctctcaagg	415992	-	-	-
21053	DKFZb547 C176	NM_018712.2	511	ctcgtctagaagacctatgactc	372789	-	see also 7574 line	-
21054	DKFZb547 E052	NM_032278.2	804	cagagcgacatactactttaat	399335	-	-	-
21055	DKFZP547 E1010	NM_015807.2	403	cajccgagcccgctgaatattcg	354469	-	see also 8506 line	-
21056	DKFZb547 G0215	NM_173643.1	1052	cagcaagtgtaatgataagaa	426937	-	-	-
21057	DKFZP564 A022	NM_030954.2	687	tggatctaccactttactgagg	395683	-	-	-
21058	DKFZP564 B1162	NM_031305.1	790	ctggaggatactttgtttatga	396622	-	-	-
21059	DKFZP564 D1116	NM_015631.1	852	tggggaccactcttacttact	354715	-	see also 8524 line	-
21060	DKFZP564 D172	NM_032042.3	1121	ccgacctcagcagctacttcc	397728	-	-	-
21061	DKFZP564 G2022	NM_015497.2	139	ctctctccgacgcttccaattgg	353576	-	see also 6438 line	-
21062	DKFZb564i I922	NM_015419.1	5740	gtatatacgaagttcaagtaca	352488	-	recaptor_activity	-
21063	DKFZP564 J047	NM_032126.1	715	cagagacctcagctcttccaaa	397918	-	-	-

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21064	DK7ZP564 K0322	NM_032040.1	790	agggagagagagctgagctattgc	397679	-	-	-
21065	DK7ZP564 K0322	NM_030796.2	220	agagctctatcacactattata	395096	-	kinase related	-
21066	DK7ZP564 K1394	NM_015544.1	864	ctgcaggagcagctcgaattta	353845	-	-	-
21067	DK7ZP564 K2062	NM_015421.1	471	tgttcggcagagacactactgtcc	352595	-	-	-
21068	DK7ZP564 M082	NM_014042.1	352	aaactctcgagagaagaacaaca	339372	-	-	-
21069	DK7ZP564 O043	NM_020319.1	398	tcgacactggcccgctgttaatt	376506	-	see also 7832 line	-
21070	DK7ZP564 O0463	NM_015420.4	1826	attctcttaattctgataaact	352566	-	see also 6405 line	-
21071	DK7ZP564 O0523	NM_032120.1	213	gagcgaattctgtatattgttc	397810	-	-	-
21072	DK7ZP564 O0823	NM_015393.1	508	tcagttggagtcacttaacaac	352187	-	-	-
21073	DK7ZP564 O1664	NM_030800.1	1300	atattacagattcttaattagg	395174	-	-	-
21074	DK7ZP564 O1863	NM_015633.1	520	cgcccaaggtccaaacttgattat	354744	-	-	-
21075	DK7ZP566 A1524	NM_030797.1	1137	aagcaattgaacagatgaatcaac	395118	-	-	-
21076	DK7ZP566 B183	NM_015509.2	399	atgccttgacttaagctctcc	353632	-	see also 6445 line	-
21077	DK7ZP566 D1346	NM_030816.1	422	ctgcctctggcggtactttaacc	395298	-	-	-
21078	DK7ZP566 D193	NM_015391.1	209	ctgtcaaaagacaagaataaag	352187	-	-	-
21079	DK7ZP566 F0546	NM_015653.1	443	ctgtagggtctatcaatgcttcc	354926	-	-	-
21080	DK7ZP566 F084	NM_015448.1	129	gaaaagacagttgaactcttgt	353062	-	-	-
21081	DK7ZP566 F2124	NM_015630.2	2115	caattggccaacnctacaac	354698	-	see also 6510 line	-
21082	DK7ZP566 K1924	NM_015463.1	483	caagttcgagaaatttccattg	353313	-	-	-
21083	DK7ZP566 M1046	NM_032127.1	1045	tcccgatcaactcttaactcisc	397926	-	see also 9079 line	-
21084	DK7ZP566 M114	NM_032128.1	234	ctgcagctgcctggagctaaact	397941	-	-	-
21085	DK7ZP566 N034	NM_030923.2	841	ctgataagctccaccactttg	395503	-	-	-

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21086	DKFZs686	NM_032273.2	418	ctgaactgctcttattatctg	399319	-	-	-
21086	DKFZs686	C1924						
21087	DKFZs686	NM_015433.1	548	ctgaagagattgacactatgct	352768	-	-	-
21088	DKFZs686	NM_152747.1	2130	baagagactgtcaactttatca	420446	-	-	-
21088	DKFZs686	I420						
21089	DKFZs686	NM_015462.2	383	agctgctgttggtttatgagg	353304	-	-	-
21089	DKFZs686	L0724						
21090	DKFZs686	NM_015603.1	151	cagccacactortattgaatca	354455	-	-	-
21091	DKFZs686	NM_031294.2	1206	aaagcaactgtcgagtttaagcgc	396573	-	-	-
21091	DKFZs686	M1120						
21092	DKFZs686	NM_015476.1	920	aaagcaagcactcctcttgaat	353429	-	-	-
21093	DKFZs686	M1523						
21093	DKFZs686	NM_015400.1	1085	aggttaaccgtcttcacatgtat	352301	-	-	-
21093	DKFZs687	N0721						
21094	DKFZs687	B1218						
21094	DKFZs686	NM_177966.3	1087	tcactaccgcgaagccttatc	430319	-	-	-
21095	DKFZs686	A17109						
21095	DKFZs686	NM_198465.1	1574	caatgaacctaaagcctctaaagg	438124	-	-	-
21096	DKFZs686	B0797						
21096	DKFZs686	NM_198539.1	527	ggagagcaactgcagaagtttg	439300	-	-	-
21097	DKFZs686	NM_194319.1	968	cagctctcagctctctatagctc	436837	-	-	-
21097	DKFZs686	B2187						
21098	DKFZs686	NM_198460.1	658	ttaacggtcaacctctacaga	437902	-	-	-
21098	DKFZs686	G0786						
21099	DKFZs686	NM_194282.1	907	agtttaccacgcggagcaattaa	439247	-	-	-
21100	DKFZs686	L1814						
21100	DKFZs686	NM_019045.2	1288	aagtacggttaagattctcagc	374688	-	-	-
21101	DKFZs686	NM_191916.4	1468	caatgaattctcagatgataaa	438867	-	-	-
21101	DKFZs686	NM_194325.1	1468	caatgaattctcagatgataaa	438867	-	-	-
21102	DKFZs686	NM_182608.2	823	ggggtctcagcgttaataaag	434633	-	-	-
21102	DKFZs686	O1689						
21103	DKFZP727	NM_015443.1	3483	cgaggacactcgcgacactagc	352987	-	-	-
21103	DKFZs727	C091						
21104	DKFZs727	G131						
21104	DKFZP727	NM_145111.1	557	ctgcagtcggttatagacttgc	413505	-	-	-
21105	DKFZs761	M111						
21105	DKFZs761	NM_015540.2	1944	caagagctaccctgtctctaac	353772	-	-	-
21106	DKFZs761	A052						
21106	DKFZs761	NM_017602.2	570	agttctgcagcagctcacacagt	359391	-	-	-
21107	DKFZs761	NM_194292.1	905	ctgaattagaagcggctatataa	438422	-	-	-
21107	DKFZs761	A078						

see also 10306 line

see also 7046 line

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21108	DKFZp761 B107	NM.173463.2	686	ggagcagagagacgcgcatttga	424838	-	-	-
21109	DKFZp761 B1514	NM.032288.3	590	atgaatctgcacactctgaagta	399369	-	-	-
21110	DKFZp761 C121	NM.032290.1	597	ttacccaggaatagatcaaatgt	399419	-	see also 9136 line	-
21111	DKFZp761 C169	NM.022913.1	1581	gggaatatctctcgatctctaa	394820	-	see also 9531 line	-
21112	DKFZp761 D221	NM.032291.1	2070	caggctacatatataacttga	399494	-	see also 9139 line	-
21113	DKFZp761 E1824	NM.022486.1	1618	acgttcgggtaccactcaaatg	383376	-	-	-
21114	DKFZp761 F241	NM.031455.2	475	tgttcgaaggaactctctatttc	397080	-	-	-
21115	DKFZp761 H0421	NM.173079.1	742	gaactctgcagcgtctagatgc	424561	-	-	-
21116	DKFZp761 H079	NM.144996.2	966	caagaccggccatctggaaatca	412524	-	-	-
21117	DKFZp761 H1710	NM.031297.2	231	gttaggaactctacaatgtcacc	396590	-	-	-
21118	DKFZp761 K1423	NM.018422.1	1423	tcagtcacataaataagctcttc	371347	-	-	-
21119	DKFZp761 L0424	NM.019590.1	2781	cggagctgacagtcacgftaaag	375361	-	see also 7715 line	-
21120	DKFZp761 L1417	NM.152913.1	727	aagactctgtgtctttatataao	421684	-	-	-
21121	DKFZp761 L1518	NM.198076.1	1114	aggtcccaaggggtcbcaactac	436971	-	-	-
21122	DKFZp761 N1114	NM.181644.2	1411	caggctcaggcagctatagtgtt	432644	-	-	-
21123	DKFZp761 O013	NM.018409.2	1340	aagtatctctcggctctattact	371189	-	-	-
21124	DKFZp761 O17121	NM.032287.1	250	atgaatgggaagtgtcacagatca	399356	-	-	-
21125	DKFZp761 P1121	NM.152906.2	435	cagagggccaggtgaactgttca	421676	-	-	-
21126	DKFZp761 C2414	NM.178542.2	1111	gttctctcaatgagatcatata	431156	-	-	-
21127	DKFZp761 E1312	NM.018410.2	1719	aaggaactgttaccagaaatca	371234	-	-	-
21128	DKFZp761 G199	NM.197956.1	871	aggtctctcggcctatagtcataa	436915	-	-	-
21129	DKFZp761 194	NM.152384.1	422	atgcagctacccagactatata	416041	-	see also 9943 line	-

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21130	DKFZp762	NM_018710.1	728	aggcattctccacacdaigt	372773	-	see also 7572 line
21131	DLNB14	NM_138489.1	433	atcgtatgcaaaatccatg	438537	-	-
21132	DNA_C9	NM_015190.3	373	gcctatgacacatctttaa	349555	-	-
21133	DNA_D1	NM_013238.1	525	ggcaccgacgaattgaaag	333831	-	-
21134	DNAPTP6	NM_015535.1	1725	ttgcacacacagctccacgt	353750	-	see also 6460 line
21135	DOCK5	NM_024040.3	1529	ctgcacacacagctccacgt	392343	-	-
21136	DOCK5	NM_024040.3	166	cgctttgagcctccacat	377408	-	see also 7876 line
21137	DOM3Z	NM_005910.2	1119	cggtgcgcctctcagttg	334047	-	-
21138	DPL1	NM_138393.1	520	tcctgcgcctctcagttg	407943	-	-
21139	DPOR1	NM_008702.2	559	agfaaacagacacacatacc	406871	-	-
21140	DPRH2	NM_001384.2	1101	ctgcacacacagctctcagttg	330198	-	-
21141	DPPA4	NM_018189.1	458	gggaacactccccaagttct	368231	-	-
21142	DREV1	NM_016025.2	1036	aggacacatctaatctac	355956	-	see also 6625 line
21143	DTPIA10	NM_058162.1	441	gaagcacacctcgaatgtg	406167	-	-
21144	DTNBP1	NM_032122.3	308	ctcctgttttgaaatctcag	397879	-	-
21145	DUFBI	NM_138419.2	630	gaatgacgaacgaatttgg	408027	-	-
21146	DULLARD	NM_015343.3	501	agactctgagctctctttaa	351752	-	-
21147	DUSP15	NM_080611.3	369	tgcctctacctcgaacatcca	406405	-	-
21148	DYX1C1	NM_130810.1	1171	agccaacgaagcaatgaact	407022	-	-
21149	DZP1	NM_014934.2	1550	ccagatgagacgtcgtatgaa	348050	-	see also 9554 line
21150	E2IG2	NM_014565.1	188	ccagatgagacgtcgtatgaa	358147	-	-
21151	E2IG4	NM_015516.1	798	gggcaacacccagcttaactg	353655	-	-
21152	E2IG5	NM_014367.2	611	atgtatgagatctctttaa	340417	-	-
21153	EAF1	NM_033083.5	956	gggaactgagctgaatg	403204	-	-
21154	EAF2	NM_018458.3	102	tcgcgcgcgtctcagttg	371780	-	-
21155	EB-1	NM_152788.2	2174	agcctctgagctcagctg	421341	-	-
21156	EB-1	NM_020140.1	958	ggccttgaggagcagatcaac	375859	-	see also 7764 line
21157	ECRG4	NM_032411.1	443	atgatactatggcgtactaac	402023	-	-
21158	EDRF1	NM_015906.2	3090	tgtccacactctcttaact	354571	-	-
21159	EGF1	NM_017611.2	367	tgtcgtcctcactcagttg	359513	-	-
21160	EGF6R	NM_015310.1	1349	ctgcgcgcgcagcgtctatcc	351422	-	see also 6322 line
21161	EG1	NM_025205.1	189	gtgacgacgtactcgaatg	394414	-	-
21162	EGLF11	NM_198283.1	2039	cagatgactctctcagttt	437643	-	-
21163	EIF2C3	NM_024852.2	2808	agatacctctccacaaatgac	391509	-	see also 8784 line
21164	EIF2C4	NM_017625.2	483	tgcacagcagatggcgtatg	359742	-	see also 7058 line
21165	ELAC1	NM_018896.1	333	cttgagcttcggcgtcttcc	372648	-	see also 7565 line
21166	ELAC2	NM_018127.4	1360	cagaggtgagcattatctg	366996	-	-
21167	ELK1	NM_015064.2	2776	gcacagcagcagcactcca	347576	-	prostate cancer(前立腺癌)
21168	ELKS	NM_152793.1	120	ctgtatgagcagcactcca	421370	-	see also 6218 line
21169	ELP4	NM_019040.2	17	gtgacacctcgtggtttgac	374586	-	see also 7673 line
21170	ELSPBP1	NM_022142.2	361	aaattccacgcgtctcttc	382467	-	-
21171	EMCN	NM_016242.2	823	aaattcttaccgttagcaat	356602	-	-
21172	EMLIN3	NM_024755.1	2832	gaacggcgtgtgtggtaac	390105	-	-

schizophrenia(精神分裂病)

phosphatase

prostate cancer(前立腺癌)

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21173	EML5	NM_183457.1	1874	cgactcaactcaactcaactcaga	435903	-	see also 10298 line
21174	EMU1	NM_183581.1	119	tggaccaccaccactctctcgc	407210	-	see also 9579 line
21175	ENAH	NM_018212.2	518	agaccactcagctcgtctaac	368483	-	see also 7322 line
21176	ENAH	NM_014666.2	377	agctctcgtcgtctcgtctaac	341964	-	-
21177	ENH2AIR1	NM_014305.2	290	ggagaccagctctcttgctg	343788	-	-
21178	ENH2	NM_014956.2	414	cgagacactcgtctcgtcgcg	346400	-	-
21179	EPK3	NM_017597.1	2016	ggagacactcgtcgtcgtcgcg	364870	-	-
21180	EPH9	NM_015881.2	168	gcgtctcgtctcgtctctctct	354984	-	-
21181	EP5111	NM_033255.1	967	gcgtctcgtctcgtctctctctg	403643	-	-
21182	ERAS	NM_181532.2	506	cgatggagctcgtctcttgatg	432385	-	signal transduction
21183	ERMAP	NM_018533.2	1383	cgacactctcgtctctctctctca	372178	-	-
21184	ESAM	NM_138961.1	826	atggcactgcccaatgatgt	409280	-	-
21185	ESPN	NM_031475.1	455	gctggagagcaagaacaactct	397167	-	-
21186	ESSRBL1	NM_018010.2	810	acgtgtaactcgcactcgaaga	365265	-	see also 7196 line
21187	ESSPL	NM_183375.1	277	ctctgctcgtcgtctcgtcgaat	435688	-	-
21188	EST1B	NM_015327.1	707	atgattatgctcgtctctgctaccc	351598	-	-
21189	ETA1B	NM_019002.2	1015	cgaaatattatcgcacactgaag	374300	-	see also 7655 line
21190	ETEA	NM_014613.1	259	cgagctctacagctatgtctct	341145	-	see also 5781 line
21191	ETR101	NM_004907.1	137	ctctcgtctctcgaactctctca	333242	-	-
21192	EVG2	NM_147127.2	1672	ctctcgtctctcgaactctctca	414977	-	-
21193	EVER2	NM_152468.3	1517	tggcactcttgagatgtctctcc	416988	-	-
21194	EVGB	NM_006485.2	1380	cgatctcaggtctctctctctcc	335600	-	-
21195	F25965	NM_019104.1	379	cgagatgctctcgaacactatgt	375232	-	-
21196	F5A	NM_012151.2	129	cgagacagctctgctctcgaaca	337172	-	EIS
21197	FAM	NM_018147.1	134	cgagatcccaagactcgaattg	367678	-	-
21198	FAM11A	NM_032508.1	970	tctctgctccctctctctctctt	400464	-	-
21199	FAM13A1	NM_014883.1	1798	cggttaccagctcgtctcgaacaga	345288	-	see also 6077 line
21200	FAM13C1	NM_198251.1	1359	cgctcttgatgcgtctcgaacaga	437272	-	see also 10314 line
21201	FAM18B	NM_016078.1	791	agctgccacactctatgtctca	356217	-	-
21202	FAM20A	NM_017565.1	1354	tggacagcgcctcctatctagatg	359104	-	-
21203	FAM20B	NM_014864.1	452	ggctcttcacacactgctgact	344941	-	-
21204	FAM20C	NM_020223.1	1731	cgctctcgcgtctcgtctgaagg	376255	-	-
21205	FAM8A1	NM_016255.1	969	tgttcttgctcacttatatacaga	356643	-	-
21206	FANCL	NM_018062.1	222	tactgatacactcgaactgac	365984	-	-
21207	FANK1	NM_145235.2	935	tgaagaagcgcctcctatctgctg	413797	-	-
21208	FAPP2	NM_032639.2	1379	gcacacacactcgaactcgaac	401161	-	-
21209	FATE	NM_033085.1	402	agccatctctctctatctctc	403215	-	-
21210	FBS1	NM_022452.1	234	actcgtctgctctcactgctc	382832	-	-
21211	FBX30	NM_033182.4	795	gcagactgaacactctctctg	403565	-	-
21212	FBX12	NM_017703.1	271	cgctctctctgagatctctctct	361078	-	-
21213	FBX18	NM_018376.2	318	cgctctcgcacactctcgaacc	370924	-	-
21214	FBXO15	NM_152616.1	887	tggccatctcactctgctg	419802	-	-

bladder transitional cell carcinoma(膀胱移行上皮癌), bladder cancer(膀胱癌), breast cancer(乳癌), non-small-cell lung cancer(非小

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21215	FBXO16	NM.172365.2	634	ctactactactactactactacgc	424855	-	-	-	-
21216	FBXO22	NM.012170.2	449	aaatctctctctctctctctctct	33771	-	-	-	-
21217	FBXO35	NM.012173.3	816	ttctctctctctctctctctctct	337744	-	-	-	see also 5175 line
21218	FBXO27	NM.17820.3	869	ctctctctctctctctctctctct	431380	-	-	-	-
21219	FBXO32	NM.036225.2	1021	ctctctctctctctctctctctct	400259	-	-	-	-
21220	FBXO34	NM.017943.2	303	ctctctctctctctctctctctct	364479	-	-	-	-
21221	FBXO6	NM.018438.2	533	ttctctctctctctctctctctct	371546	-	-	-	see also 7478 line
21222	FBXW5	NM.018998.2	1334	ctctctctctctctctctctctct	374101	-	-	-	see also 7651 line
21223	FBXW7	NM.018315.2	1471	ttctctctctctctctctctctct	370198	-	-	-	see also 7394 line
21224	FBXW8	NM.012174.1	548	ttctctctctctctctctctctct	337757	-	-	-	-
21225	FCGBP	NM.003890.1	2604	ttctctctctctctctctctctct	332255	-	-	-	-
21226	FEMIA	NM.018708.1	1009	ttctctctctctctctctctctct	372734	-	-	-	-
21227	FEZL	NM.018006.2	979	ttctctctctctctctctctctct	365233	-	-	-	-
21228	FGF	NM.017704.1	412	ttctctctctctctctctctctct	361092	-	-	-	see also 7185 line
21229	FILP1	NM.015867.1	537	ttctctctctctctctctctctct	355019	-	-	-	-
21230	FIS	NM.175616.2	535	ctctctctctctctctctctctct	429153	-	-	-	-
21231	KRP	NM.024301.2	1658	ttctctctctctctctctctctct	388214	-	-	-	-
21232	KSG14	NM.022145.2	1034	ttctctctctctctctctctctct	382524	-	-	-	-
21233	KSG32	NM.031307.2	273	ttctctctctctctctctctctct	396661	-	-	-	-
21234	KSG42	NM.032032.1	1671	ttctctctctctctctctctctct	377655	-	-	-	-
21235	FL00005	NM.020441.2	348	ttctctctctctctctctctctct	377482	-	-	-	-
21236	FL00007	NM.033449.1	707	ttctctctctctctctctctctct	404030	-	-	-	see also 9425 line
21237	FL10006	NM.017969.1	2308	ttctctctctctctctctctctct	364932	-	-	-	-
21238	FL10036	NM.017975.2	914	ttctctctctctctctctctctct	364931	-	-	-	-
21239	FL10055	NM.017983.3	140	ttctctctctctctctctctctct	365034	-	-	-	see also 7188 line
21240	FL10081	NM.017991.3	458	ttctctctctctctctctctctct	365107	-	-	-	-
21241	FL10099	NM.017994.3	823	ttctctctctctctctctctctct	365143	-	-	-	-
21242	FL10103	NM.017998.2	805	ttctctctctctctctctctctct	365175	-	-	-	-
21243	FL10116	NM.018000.1	463	ttctctctctctctctctctctct	365207	-	-	-	-
21244	FL10154	NM.018011.1	354	ttctctctctctctctctctctct	365280	-	-	-	see also 7188 line
21245	FL10156	NM.018013.1	328	ttctctctctctctctctctctct	374469	-	-	-	-
21246	FL10159	NM.018013.1	772	ttctctctctctctctctctctct	365289	-	-	-	-
21247	FL10178	NM.018015.2	838	ttctctctctctctctctctctct	365365	-	-	-	see also 7211 line
21248	FL10188	NM.018017.2	2170	ttctctctctctctctctctctct	365420	-	-	-	-
21249	FL10193	NM.018019.2	423	ttctctctctctctctctctctct	365453	-	-	-	-
21250	FL10199	NM.018022.1	1013	ttctctctctctctctctctctct	365460	-	-	-	-
21251	FL10204	NM.018024.1	519	ttctctctctctctctctctctct	365473	-	-	-	-
21252	FL10213	NM.018026.3	895	ttctctctctctctctctctctct	365481	-	-	-	-
21253	FL10232	NM.018033.1	353	ttctctctctctctctctctctct	365504	-	-	-	-
21254	FL10233	NM.018034.2	1271	ttctctctctctctctctctctct	365556	-	-	-	-
21255	FL10241	NM.018035.1	319	ttctctctctctctctctctctct	365568	-	-	-	-
21256	FL10246	NM.018038.1	441	ttctctctctctctctctctctct	365662	-	-	-	-
21257	FL10251	NM.018039.2	2156	ttctctctctctctctctctctct	365697	-	-	-	-
21258	FL10260	NM.018042.2	504	ttctctctctctctctctctctct	365700	-	-	-	-

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21259	FLJ10287	NM.018083.1	52	aaagatgaaatccttaactat	375032	-	-	-
21260	FLJ10298	NM.018050.2	415	agccgcatatatactcaatcc	365852	-	-	-
21261	FLJ10300	NM.018051.2	3076	aaagaaatcaatcaaatctac	365916	-	-	-
21262	FLJ10305	NM.018052.3	2275	aaagctcatctctctatctat	365922	-	-	-
21263	FLJ10307	NM.018053.1	119	aaagcctatgccatcttgacaa	365934	-	-	see also 7217 line
21264	FLJ10316	NM.018055.1	1031	ctgtcttgtctctctgaacata	365935	-	-	-
21265	FLJ10350	NM.018067.2	1427	cggttgacccctagcaaaccaag	366045	-	-	-
21266	FLJ10359	NM.018073.3	421	atctctagcgcctctgtgactct	366123	-	-	-
21267	FLJ10374	NM.018074.3	204	atctctagcgcctctgtgactct	366167	-	-	-
21268	FLJ10375	NM.018075.2	797	atctctagcgcctctgtgactct	366203	-	-	see also 7262 line
21269	FLJ10385	NM.018081.1	919	cgaggaagccatcttaactctcc	366380	-	-	-
21270	FLJ10404	NM.019057.2	4157	ctctgaactggacaaactcagc	374800	-	-	-
21271	FLJ10407	NM.018087.3	271	cgctcagctctgttgacactctg	366498	-	-	see also 7249 line
21272	FLJ10415	NM.018089.1	393	ctgtcatcgttttaacctbaagc	366565	-	-	-
21273	FLJ10420	NM.018090.3	322	ggcgcgcgcgcctttttgaatt	366578	-	-	-
21274	FLJ10460	NM.018097.1	336	gaatctcctctggcaaacactgt	366648	-	-	-
21275	FLJ10462	NM.018099.3	1536	ttgacatctgcgcagtgaactgc	366690	-	-	-
21276	FLJ10490	NM.018111.1	157	cggaaagacgcctgtctttgac	366811	-	-	-
21277	FLJ10493	NM.018112.1	576	aattctatcaatataaagaatt	366830	-	-	-
21278	FLJ10498	NM.018115.1	1770	caatttcgacaanaagaagaaga	366851	-	-	-
21279	FLJ10520	NM.018124.2	1078	atctctcgaactataatactgac	366955	-	-	-
21280	FLJ10521	NM.018125.2	2394	ctgctctcaagcttaactatgac	366979	-	-	see also 7268 line
21281	FLJ10534	NM.018128.4	2435	atctctctctgaattcgtttttg	367028	-	-	-
21282	FLJ10539	NM.018130.1	1781	ctctcttaacgcgcgaactatt	367096	-	-	-
21283	FLJ10546	NM.018133.2	1548	aattctctgcgcctctgaaact	367177	-	-	-
21284	FLJ10547	NM.018134.1	512	caatctcactctgccttgaaactc	367206	-	-	-
21285	FLJ10565	NM.018140.1	723	gaagccgcagcttgatcgaacc	367592	-	-	-
21286	FLJ10569	NM.018142.1	1224	aagaatctcactatcgatgaca	367634	-	-	see also 7273 line
21287	FLJ10579	NM.018145.1	1065	ttgagcgaagaagctctatgac	367665	-	-	-
21288	FLJ10597	NM.018501.2	474	tatctctatggatctcttttaag	357899	-	-	-
21289	FLJ10652	NM.018601.1	199	aagcgaattctatcaatttaatt	367909	-	-	-
21290	FLJ10661	NM.018563.1	262	ggcagctctcaattctaatgact	367981	-	-	-
21291	FLJ10665	NM.018173.1	193	tatgtctctccgcttctgaact	367992	-	-	-
21292	FLJ10697	NM.018181.3	1072	caatctttctctcaaatgctctc	368066	-	-	-
21293	FLJ10700	NM.018182.1	1829	caagaagctgaattctctatatt	368145	-	-	see also 7307 line
21294	FLJ10724	NM.018194.1	354	agagctgcacgcctgttgatgac	368304	-	-	-
21295	FLJ10737	NM.018198.1	605	ttgcctctgcgcgaactctgac	368347	-	-	-
21296	FLJ10743	NM.018201.2	98	ctgcctctgcgcgaactctgac	368373	-	-	-
21297	FLJ10747	NM.018202.2	1970	ttgcccactataataaactatgac	368415	-	-	-
21298	FLJ10748	NM.018203.1	1172	ttgaccactatcttccaaactctc	368421	-	-	-
21299	FLJ10781	NM.018215.2	500	aaagcactcccccgttgatctcc	368523	-	-	-
21300	FLJ10786	NM.018219.1	1379	atctctatcaggtctctgataag	368542	-	-	-
21301	FLJ10817	NM.018075.2	2587	agaaatgtctgctctgtgacac	368279	-	-	-
21302	FLJ10946	NM.018241.1	546	caattgactgcactctatgacgc	368955	-	-	-

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21303	FLJ10871	NM.018250.1	1966	aaagaaagctagacacataatc	365133	-	-	-	-
21304	FLJ10874	NM.018252.1	1169	aaagcagcagcagcagcagcagc	365147	-	-	-	-
21305	FLJ10884	NM.019075.2	365	aaagcagcagcagcagcagcagc	374973	-	-	-	-
21306	FLJ10890	NM.018255.2	3226	ctggagcagcagcagcagcagc	368347	-	-	-	-
21307	FLJ10901	NM.018255.1	504	caagcagcagcagcagcagcagc	368514	-	-	-	-
21308	FLJ10902	NM.018266.1	930	tgctcagcagcagcagcagcagc	369532	-	-	-	see also 7356 line
21309	FLJ10904	NM.018268.1	1300	tgctcagcagcagcagcagcagc	369550	-	-	-	-
21310	FLJ10922	NM.018273.2	161	aaagcagcagcagcagcagcagc	369818	-	-	-	see also 7360 line
21311	FLJ10936	NM.018275.2	823	aaagcagcagcagcagcagcagc	369866	-	-	-	-
21312	FLJ10970	NM.018286.1	577	aaagcagcagcagcagcagcagc	369868	-	-	-	-
21313	FLJ10979	NM.018289.2	222	aaagcagcagcagcagcagcagc	369778	-	-	-	-
21314	FLJ10996	NM.019044.2	1608	tgaccttcagcagcagcagcagc	369817	-	-	-	-
21315	FLJ10997	NM.018293.1	597	tgaccttcagcagcagcagcagc	369817	-	-	-	-
21316	FLJ10998	NM.018294.3	1203	ctgagcagcagcagcagcagcagc	369855	-	-	-	-
21317	FLJ11000	NM.018295.1	257	ctgctgcttcagcagcagcagc	369860	-	-	-	-
21318	FLJ11004	NM.018296.2	1262	tgctcagcagcagcagcagcagc	369863	-	-	-	-
21319	FLJ11017	NM.018302.1	763	tgagcagcagcagcagcagcagc	369879	-	-	-	-
21320	FLJ11021	NM.023012.3	1081	tgaccttcagcagcagcagcagc	384972	-	-	-	-
21321	FLJ11029	NM.018304.1	826	aaagcagcagcagcagcagcagc	370007	-	-	-	-
21322	FLJ11036	NM.018306.2	717	tgagcagcagcagcagcagcagc	370028	-	-	-	see also 7384 line
21323	FLJ11046	NM.018309.1	1790	ctgctgcttcagcagcagcagc	370028	-	-	-	see also 7389 line
21324	FLJ11082	NM.018311.2	1449	tgagcagcagcagcagcagcagc	370250	-	-	-	-
21325	FLJ11086	NM.018316.2	391	tgagcagcagcagcagcagcagc	370251	-	-	-	-
21326	FLJ11127	NM.019018.1	957	tgagcagcagcagcagcagcagc	371485	-	-	-	-
21327	FLJ11171	NM.018348.4	842	tgagcagcagcagcagcagcagc	370560	-	-	-	-
21328	FLJ11184	NM.018352.1	345	tgagcagcagcagcagcagcagc	370564	-	-	-	-
21329	FLJ11193	NM.018356.1	1184	ctgctgcttcagcagcagcagc	370562	-	-	-	-
21330	FLJ11200	NM.018359.1	1110	caagcagcagcagcagcagcagc	370689	-	-	-	see also 7413 line
21331	FLJ11218	NM.018363.1	624	tgagcagcagcagcagcagcagc	370787	-	-	-	-
21332	FLJ11220	NM.018364.2	143	tgagcagcagcagcagcagcagc	370798	-	-	-	see also 7417 line
21333	FLJ11235	NM.019033.1	301	cgagcagcagcagcagcagcagc	374584	-	-	-	-
21334	FLJ11259	NM.018370.1	365	tgagcagcagcagcagcagcagc	370892	-	-	-	see also 7424 line
21335	FLJ11267	NM.019607.1	659	caagcagcagcagcagcagcagc	375511	-	-	-	-
21336	FLJ11280	NM.018378.2	1358	ctgctgcttcagcagcagcagc	370937	-	-	-	-
21337	FLJ11286	NM.018381.1	383	actgagcagcagcagcagcagc	370961	-	-	-	-
21338	FLJ11292	NM.018362.1	190	ctgctgcttcagcagcagcagc	370966	-	-	-	-
21339	FLJ11301	NM.018365.1	1388	cgagcagcagcagcagcagcagc	370996	-	-	-	-
21340	FLJ11305	NM.018366.1	909	tgagcagcagcagcagcagcagc	371023	-	-	-	-
21341	FLJ11331	NM.018392.3	891	ctgagcagcagcagcagcagc	371043	-	-	-	-
21342	FLJ11336	NM.018393.2	1667	tgctcagcagcagcagcagcagc	371136	-	-	-	see also 7437 line
21343	FLJ11362	NM.021946.2	1447	cgagcagcagcagcagcagcagc	381540	-	-	-	see also 8209 line
21344	FLJ11363	NM.014801.2	1026	tgagcagcagcagcagcagcagc	343696	-	-	-	-
21345	FLJ11457	NM.024753.2	2091	tgagcagcagcagcagcagcagc	390014	-	-	-	-
21346	FLJ11467	NM.024963.2	1716	tgagcagcagcagcagcagcagc	392754	-	-	-	-

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21347	FLJ11506	NM_024666.2	683	ggagatggaatatacaaca	388900	-	-	-
21348	FLJ11526	NM_024662.1	846	gaagcgaagcaatcatatct	388328	-	-	-
21349	FLJ11535	NM_024886.1	1075	gggcaactgactgtttatcgc	391715	-	-	-
21350	FLJ11560	NM_025182.2	1432	ttggagatggtggatcactgc	394292	-	-	see also 8874 line
21351	FLJ11712	NM_024570.1	638	ttggatgaagctgttccanctg	387343	-	-	-
21352	FLJ11730	NM_022756.3	553	ccgtctgcagcttgattatga	389982	-	-	-
21353	FLJ11752	NM_192281.1	751	acgtctggaagctgtttacagc	415315	-	-	see also 9829 line
21354	FLJ11753	NM_024659.2	595	gggttccatcaattgaatatac	388671	-	-	see also 8869 line
21355	FLJ11773	NM_021934.3	945	gggttgataaagctgttgccaca	381385	-	-	-
21356	FLJ11785	NM_021930.2	1488	tgggtatctgcataaagatat	381336	-	-	see also 8200 line
21357	FLJ11795	NM_024669.1	621	aattgaagctgaacagattat	388815	-	-	-
21358	FLJ11800	NM_024874.1	252	taactctgctgctgctcatca	392760	-	-	-
21359	FLJ11807	NM_024954.3	334	gcgagcaaacagagatgattct	392708	-	-	-
21360	FLJ11848	NM_025155.1	867	ttgtctcagacgctttcaactc	394130	-	-	-
21361	FLJ11856	NM_024531.3	640	caatgcagacacttcatctct	386782	-	-	receptor activity
21362	FLJ12057	NM_024768.1	850	agactccggacccagacatato	390317	-	-	-
21363	FLJ12085	NM_022771.3	1660	tggccctgaactcactgtccaaa	384085	-	-	see also 8462 line
21364	FLJ12150	NM_024736.4	888	ctacacccatgaattgctgct	389758	-	-	-
21365	FLJ12168	NM_024682.1	1488	gaactctgctgaaggaacttga	389127	-	-	-
21366	FLJ12355	NM_024986.1	471	agggaggagacaactcaactc	392776	-	-	-
21367	FLJ12363	NM_032167.1	65	gaagcgaatcacagacatgaca	396405	-	-	transcription_regulat or
21368	FLJ12436	NM_024661.2	260	aaagactgtggagacagtataga	385708	-	-	-
21369	FLJ12439	NM_023071.1	134	aaagacccgaagctgtctatcg	385243	-	-	-
21370	FLJ12442	NM_022906.1	935	atggcaaggtccctccataag	384785	-	-	-
21371	FLJ12448	NM_022895.1	47	gaagatctggaagtgatataca	384691	-	-	-
21372	FLJ12505	NM_024745.2	1224	tggctctcaaaatccgaattag	389913	-	-	-
21373	FLJ12517	NM_023007.1	1122	ctctctggccaatacacttgaag	384936	-	-	-
21374	FLJ12525	NM_031206.2	226	tgggaacctgtgactgttatct	395923	-	-	see also 8988 line
21375	FLJ12541	NM_022369.2	599	ctgggaacctgtcttatctgctc	382726	-	-	-
21376	FLJ12571	NM_024926.1	216	tgggaactaaactgaacttggc	392269	-	-	see also 8808 line
21377	FLJ12572	NM_022905.2	649	ttgttctatgcacgaacatttt	384756	-	-	-
21378	FLJ12577	NM_030925.1	568	ttgttctatgcacactcttara	395522	-	-	-
21379	FLJ12584	NM_025139.2	1622	gaatatacgaactgtatgaagc	393945	-	-	-
21380	FLJ12598	NM_024754.2	581	aacttccacaagaactcaactg	390079	-	-	see also 8868 line
21381	FLJ12604	NM_024782.1	1379	caacttccacgcactgtctaac	388093	-	-	-
21382	FLJ12610	NM_024762.1	533	agagacttgcacgtctctcttc	390648	-	-	see also 8659 line
21383	FLJ12616	NM_024572.1	327	cgcttctactccctccatagc	386632	-	-	-
21384	FLJ12666	NM_024595.1	381	aaagatctctctctctctcttc	387712	-	-	-
21385	FLJ12681	NM_022773.1	402	tggccctcttgatgaataac	394094	-	-	-
21386	FLJ12684	NM_024554.2	1140	aaagatctctctctctctcttc	386852	-	-	-
21387	FLJ12700	NM_024910.1	469	aaagggaggtccctcaactaac	391975	-	-	-
21388	FLJ12716	NM_021942.4	3103	gaatgaacacgcgcctcatatt	381491	-	-	-
21389	FLJ12750	NM_024667.1	312	aaagcaagcttgcacgaataac	388802	-	-	-

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21390	FLJ172787	NM_02321751	442	aaggcaactgagatgctcttgg	398501	-	see also 9088 line
21391	FLJ172788	NM_0224921	692	aggactcaactgagctctctagc	383467	-	-
21392	FLJ172806	NM_0228311	246	aggcagatagcagatcagata	384465	-	-
21393	FLJ172875	NM_0234541	326	atctctgcttgcctctctatg	388941	-	kinase-related
21394	FLJ172886	NM_0191081	728	gtgcctgcgctctctttacc	373560	-	-
21395	FLJ12903	NM_0227531	290	gtgcgaacctctgctcttttc	383956	-	-
21396	FLJ12949	NM_0230082	466	gagacatgtcgaagaattg	384948	-	-
21397	FLJ12973	NM_0230081	494	cggagttctaacctcgaagag	391909	-	-
21398	FLJ12975	NM_0248092	2038	gttttgcgcgaactctatctc	390925	-	-
21399	FLJ12994	NM_0228412	1048	cagcgcctcagcgaactctaac	384562	-	-
21400	FLJ13031	NM_0246681	1669	gactcaaccacgcacataaaa	389281	-	-
21401	FLJ13081	NM_0248341	1351	gtgtttctccagcgaatctaac	391261	-	-
21402	FLJ13089	NM_0249532	294	atctcaccgcgcgacttgaatc	392605	-	see also 8822 line
21403	FLJ13096	NM_0250001	1260	atctcaccgcgcgacttgaatc	392892	-	-
21404	FLJ13114	NM_0245411	183	gtgttgtaactgccttctctaaa	386919	-	see also 8635 line
21405	FLJ13150	NM_0248131	843	cattctgcgactgccttctctaaa	390981	-	-
21406	FLJ13188	NM_0220661	597	ttgttgtaactgccttctctaaa	381780	-	-
21407	FLJ13197	NM_0246111	443	ttgttgtaactgccttctctaaa	387972	-	see also 8259 line
21408	FLJ13215	NM_0250041	981	gtgttcgacgcgactgccttctc	390093	-	-
21409	FLJ13231	NM_0230732	1540	gtgttcgacgcgactgccttctc	385093	-	-
21410	FLJ13238	NM_0249022	1025	aggcagctgtgtgcgaacctttg	385107	-	-
21411	FLJ13263	NM_0251252	349	cajctctgtgtgcgaacctttg	391884	-	-
21412	FLJ13273	NM_0237511	804	gcctcttaacctctctgtttgc	393823	-	-
21413	FLJ13291	NM_0231781	692	gacctgtgtgtgtgcgaatgc	389928	-	-
21414	FLJ13310	NM_0251181	820	tggtttgtgtgcgcgaacttta	398534	-	-
21415	FLJ13330	NM_0250912	68	aggcaaacactgcgaactcttc	393564	-	-
21416	FLJ13352	NM_0245921	758	atctttctgcgcgaactcttc	387689	-	-
21417	FLJ13386	NM_0251802	2173	aggcaaacactgcgcgaactctc	394238	-	see also 8873 line
21418	FLJ13441	NM_0321811	874	aggcaaacactgcgcgaactctc	398544	-	-
21419	FLJ13444	NM_0239241	655	cagatcagctgtctactacattg	385317	-	-
21420	FLJ13544	NM_0250081	519	cagctcgggtgtgtgtgtgtgt	393109	-	-
21421	FLJ13576	NM_0224842	1837	ttgcaccagactgcgaactata	383321	-	see also 8813 line
21422	FLJ13611	NM_0249411	754	tgatatacgcgcgaactataac	392381	-	-
21423	FLJ13614	NM_1300761	1066	cgtgtgtgtgtgtgtgtgtgtgt	409355	-	-
21424	FLJ13615	NM_0251141	1696	atgaatcgcgaactatatttta	393758	-	-
21425	FLJ13621	NM_0250091	951	tccatagatgcgaacttgatgag	393138	-	-
21426	FLJ13639	NM_0247051	339	atcaaatgttgcgtgtgtgtgtg	389444	-	-
21427	FLJ13657	NM_0248281	110	ggatataaacgcgaactcttgc	391150	-	-
21428	FLJ13710	NM_0248171	1320	ttctgtgcgcgcgaactctgc	391068	-	-
21429	FLJ13725	NM_0245192	741	ttctgtgcgcgcgaactctgc	386579	-	-
21430	FLJ13744	NM_0250111	532	cagatcagctgtgtgtgtgtgt	393142	-	-
21431	FLJ13788	NM_0247731	877	aaggcagcagctgtgtgtgtgt	390450	-	-
21432	FLJ13840	NM_0217462	1245	ttctcctctgcgcgaactcttt	388878	-	-
21433	FLJ13841	NM_0247021	1406	ttctcctctgcgcgaactcttt	389435	-	-

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21434	F _L J13868	NM 022744.1	264	hacgtacacgcgcgcacatctgc	383849	-	-	-	see also 8452 line
21435	F _L J13909	NM 025108.1	1369	agacacacgtctccaccatcc	393676	-	-	-	-
21436	F _L J13910	NM 022780.2	970	tgctctccgcgtttbaattaac	384180	-	-	-	see also 8471 line
21437	F _L J13912	NM 022770.2	817	agtcgcgaaggaacgataact	384028	-	-	-	-
21438	F _L J13941	NM 024848.1	98	cgctgcgaaggaacgataact	384117	-	-	-	-
21439	F _L J13946	NM 132275.2	530	cttaccagcgcgcgcgttatcc	415277	-	-	-	-
21440	F _L J13955	NM 024758.1	936	ggctgcgcgcgcgcgcgttaact	390154	-	-	-	see also 8739 line
21441	F _L J13984	NM 024770.1	616	tgctacacacgtctccacga	390330	-	-	-	-
21442	F _L J14001	NM 024677.3	1578	tgctgttaactctgtttcgaag	389043	-	-	-	signal transduction
21443	F _L J14009	NM 024760.1	1387	tgctcaaggtctacacatctgc	390188	-	-	-	transcription regulat
21444	F _L J14050	NM 024869.1	452	catcaacgtctcgttgacacaag	391583	-	-	-	-
21445	F _L J14054	NM 024563.2	635	tgctttacacaccctactataa	387317	-	-	-	-
21446	F _L J14075	NM 024894.1	1172	tggatataagactctctacaaag	391747	-	-	-	-
21447	F _L J14084	NM 021637.1	327	aagcattgtgccttgaaagtgc	380946	-	-	-	-
21448	F _L J14100	NM 025025.1	1020	ggctgtacagacgctttctcag	393154	-	-	-	-
21449	F _L J14103	NM 024889.1	229	agacattcctcgtctctgaa	389305	-	-	-	see also 8836 line
21450	F _L J14146	NM 024709.2	394	atctcgcaaggtctatctcaaa	389487	-	-	-	-
21451	F _L J14168	NM 024565.4	1105	gcacacctacacactatcttga	387325	-	-	-	-
21452	F _L J14299	NM 025068.1	1322	atccgcacacactatctctgc	393466	-	-	-	-
21453	F _L J14351	NM 024732.1	229	tgctgaacgtctgactgttgc	389726	-	-	-	-
21454	F _L J14397	NM 032779.2	1773	tgcttgatctatctgtttatgc	401453	-	-	-	-
21455	F _L J14399	NM 032780.2	132	tgcttgatctatctgtttatgc	401458	-	-	-	-
21456	F _L J14464	NM 032789.1	1012	cggttgatctatctgtttatgc	401516	-	-	-	-
21457	F _L J14503	NM 152780.2	902	aaagacagctctgaagctaac	421088	-	-	-	-
21458	F _L J14525	NM 032800.1	93	ggatgcgaagcgtcttaactac	401544	-	-	-	-
21459	F _L J14564	NM 032550.1	1155	ggatgcgaagcgtcttaactac	400654	-	-	-	-
21460	F _L J14566	NM 032806.4	1789	tgacacagcgtctctatctcag	401588	-	-	-	-
21461	F _L J14594	NM 032808.2	1237	gttcgcacgcgcgcgtttcttc	401595	-	-	-	-
21462	F _L J14624	NM 032813.1	274	tgcttgatctatctgtttatgc	401603	-	-	-	-
21463	F _L J14639	NM 032815.2	267	cgctgcgtctcgcgaatacaat	401644	-	-	-	-
21464	F _L J14640	NM 032816.2	1117	agttacactctcgtttgttga	401675	-	-	-	-
21465	F _L J14641	NM 032817.1	938	ggctctctatctatcttaatcc	401679	-	-	-	-
21466	F _L J14642	NM 032818.1	324	ggctctctatctatcttaatcc	401681	-	-	-	-
21467	F _L J14668	NM 032822.1	446	aagagcgtctctatcttaatcc	401684	-	-	-	-
21468	F _L J14681	NM 032824.1	962	tgatgcgtctctatcttaatcc	401696	-	-	-	-
21469	F _L J14721	NM 032829.1	255	cggttgatctatctatcttct	401741	-	-	-	-
21470	F _L J14775	NM 032837.1	204	aagatgacgaagcgaagacaa	401885	-	-	-	-
21471	F _L J14803	NM 032842.1	583	tcgcctctatctatcttaatcc	401942	-	-	-	see also 9305 line
21472	F _L J14816	NM 032845.1	324	ggatgcgtctatctatcttct	401982	-	-	-	-
21473	F _L J14825	NM 032847.1	226	cgatgcgaagcgtctatcttgc	401989	-	-	-	-
21474	F _L J14827	NM 032848.1	808	cggttgatctatctatcttgc	402003	-	-	-	-
21475	F _L J14834	NM 032849.2	715	aagagcgtctatctatcttgc	402072	-	-	-	see also 9311 line

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21476	FLJ14871	NM_032854.1	822	agccagaccgctgctctatcg	402080	-	-	-
21477	FLJ14888	NM_032856.1	951	ggagacagccgctgagagac	402093	-	-	-
21478	FLJ14857	NM_032862.2	708	ctgctgctgagctgctctgta	402194	-	-	-
21479	FLJ14966	NM_032867.1	1428	aaagcgcgagctgctctatcag	402263	-	-	-
21480	FLJ14981	NM_032868.2	457	tggtcctctgctcagacaaagg	402270	-	-	transcription_regulat or
21481	FLJ16030	NM_198499.1	1302	cagacatcgtctcatctaatc	438587	-	-	-
21482	FLJ20003	NM_017615.1	276	cgcgcagatcgctcatcagacc	359587	-	-	-
21483	FLJ20006	NM_017618.1	900	aaagacacgctgctctctatc	359613	-	-	-
21484	FLJ20010	NM_019021.1	902	cagctattgattcattaggaag	374506	-	-	-
21485	FLJ20013	NM_017621.2	325	agcactgacccccaagctcaac	359659	-	-	-
21486	FLJ20032	NM_017628.2	2767	aaagcagcttgagactcatatg	359708	-	-	-
21487	FLJ20045	NM_017638.1	244	ctggagcaccatttgaactatct	359861	-	-	see also 7062 line
21488	FLJ20051	NM_018087.1	387	aaagatctcaagagctgaatatt	371742	-	-	see also 7698 line
21489	FLJ20054	NM_018049.1	293	aaagattgagcctctcttact	374742	-	-	-
21490	FLJ20071	NM_017653.2	1889	agttgcttgagctctcaatcag	360288	-	-	see also 7082 line
21491	FLJ20073	NM_017654.2	3192	ctgagctgagctctcaatcag	360388	-	-	-
21492	FLJ20084	NM_017659.1	301	caactctctgagacactact	360448	-	-	see also 7088 line
21493	FLJ20097	NM_024553.2	385	taagacgtatagacacaaatg	387178	-	-	see also 6641 line
21494	FLJ20136	NM_017684.2	2029	tgagcgcgagctctcaatcag	360640	-	-	-
21495	FLJ20151	NM_017688.1	3	aaagcagacacatcattagag	360821	-	-	-
21496	FLJ20152	NM_019000.2	721	gaagatctgctgctgataatg	374117	-	-	see also 7652 line
21497	FLJ20156	NM_017691.1	301	ctgcgagctctcatctgctatc	360632	-	-	see also 7113 line
21498	FLJ20160	NM_017694.2	1611	ctgaaagagagctgctctatt	360957	-	-	see also 7116 line
21499	FLJ20174	NM_017695.1	2324	aaagctcttcagctagattt	361055	-	-	-
21500	FLJ20184	NM_017700.1	944	atgtagagctcttgtagaac	361070	-	-	-
21501	FLJ20186	NM_017702.1	697	cgccttgctctcaatctgactg	361077	-	-	-
21502	FLJ20195	NM_017706.3	160	cctggagacactcggaagacatg	361096	-	-	-
21503	FLJ20200	NM_017708.1	1234	cgcctcaactcagctctcttaag	361105	-	-	-
21504	FLJ20202	NM_017709.2	460	ctctcaagacctgagcctact	361116	-	-	-
21505	FLJ20211	NM_017713.1	430	aggtctaactgtagcactgaag	361128	-	-	molecular_function
21506	FLJ20232	NM_018008.3	1261	aggttcctcttgtagctatgga	374454	-	-	unknown
21507	FLJ20241	NM_017721.2	1135	aaagcagcagcagctacacacg	361149	-	-	kinase related
21508	FLJ20259	NM_017730.2	1832	atgacagcgaagctcgaagtag	361192	-	-	see also 7124 line
21509	FLJ20265	NM_017733.2	1542	cgcctctctcaactctctctg	361239	-	-	-
21510	FLJ20272	NM_017735.2	2318	agagctctatgctacagatag	361293	-	-	see also 7125 line
21511	FLJ20274	NM_017736.1	894	agagatctctccacttaacta	361403	-	-	-
21512	FLJ20275	NM_017737.1	602	ttgacgcctctgagaaagcact	361422	-	-	-
21513	FLJ20280	NM_017741.1	634	caatatacagcactcttgtag	361434	-	-	see also 7126 line
21514	FLJ20287	NM_017746.1	1754	caatatacagcactcttgtag	361458	-	-	-
21515	FLJ20291	NM_017748.3	1359	tcggtagagcagagatctact	361667	-	-	see also 7139 line
21516	FLJ20297	NM_017751.1	917	atgagctctcaactctctgag	361673	-	-	-
21517	FLJ20300	NM_017753.1	1219	ctgctgctcagcaggaatcacc	361702	-	-	see also 7140 line

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21518	FLJ20303	NM.017755.4	587	agcgtctccatgaagcttctg	361787	-	see also 7144 line
21519	FLJ20308	NM.017758.2	318	atgctcccgagacacataaa	361889	-	-
21520	FLJ20309	NM.017759.2	1762	atgctgaagctgcgtacaaag	361923	-	-
21521	FLJ20311	NM.017760.4	670	atgctgctctcccttcattata	361958	-	see also 7147 line
21522	FLJ20313	NM.017762.1	570	atgctgctctcccttcattata	362033	-	-
21523	FLJ20313	NM.017763.1	1016	atgctgctctcccttcattata	362074	-	-
21524	FLJ20323	NM.019005.1	791	atgctgctctcccttcattata	374381	-	see also 7656 line
21525	FLJ20343	NM.017771.2	805	atgctgctctcccttcattata	362198	-	-
21526	FLJ20345	NM.017771.1	579	atgctgctctcccttcattata	362219	-	-
21527	FLJ20356	NM.018986.2	484	atgctgctctcccttcattata	374071	-	-
21528	FLJ20360	NM.017782.2	704	atgctgctctcccttcattata	362235	-	-
21529	FLJ20364	NM.017785.2	581	atgctgctctcccttcattata	362381	-	-
21530	FLJ20373	NM.017792.1	558	atgctgctctcccttcattata	362450	-	-
21531	FLJ20397	NM.017802.2	1578	atgctgctctcccttcattata	362635	-	-
21532	FLJ20420	NM.017812.1	276	atgctgctctcccttcattata	362659	-	-
21533	FLJ20422	NM.017814.1	1089	atgctgctctcccttcattata	362672	-	-
21534	FLJ20432	NM.017815.1	1147	atgctgctctcccttcattata	362742	-	-
21535	FLJ20436	NM.017822.1	577	atgctgctctcccttcattata	362752	-	-
21536	FLJ20445	NM.017824.2	797	atgctgctctcccttcattata	362769	-	-
21537	FLJ20449	NM.017826.1	561	atgctgctctcccttcattata	362788	-	-
21538	FLJ20452	NM.017828.2	386	atgctgctctcccttcattata	362824	-	-
21539	FLJ20457	NM.017832.2	424	atgctgctctcccttcattata	362869	-	-
21540	FLJ20464	NM.017834.1	679	atgctgctctcccttcattata	362943	-	-
21541	FLJ20477	NM.017837.2	1222	atgctgctctcccttcattata	362958	-	-
21542	FLJ20487	NM.017841.1	481	atgctgctctcccttcattata	353011	-	see also 7160 line
21543	FLJ20489	NM.017842.1	1138	atgctgctctcccttcattata	363014	-	-
21544	FLJ20502	NM.017845.2	122	atgctgctctcccttcattata	363021	-	-
21545	FLJ20507	NM.017845.1	751	atgctgctctcccttcattata	363128	-	-
21546	FLJ20508	NM.017850.1	756	atgctgctctcccttcattata	363149	-	-
21547	FLJ20509	NM.017851.1	868	atgctgctctcccttcattata	363149	-	-
21548	FLJ20512	NM.017854.1	290	atgctgctctcccttcattata	363152	-	-
21549	FLJ20513	NM.017855.2	391	atgctgctctcccttcattata	363165	-	-
21550	FLJ20516	NM.017855.1	49	atgctgctctcccttcattata	363167	-	see also 7162 line
21551	FLJ20519	NM.017860.3	350	atgctgctctcccttcattata	363200	-	-
21552	FLJ20522	NM.017861.1	571	atgctgctctcccttcattata	363217	-	-
21553	FLJ20530	NM.017864.1	592	atgctgctctcccttcattata	363253	-	see also 7164 line
21554	FLJ20533	NM.017866.3	416	atgctgctctcccttcattata	363303	-	-
21555	FLJ20534	NM.017867.1	358	atgctgctctcccttcattata	363318	-	-
21556	FLJ20542	NM.017871.3	558	atgctgctctcccttcattata	363331	-	-
21557	FLJ20546	NM.017872.2	314	atgctgctctcccttcattata	363343	-	-
21558	FLJ20555	NM.017877.2	430	atgctgctctcccttcattata	363361	-	-
21559	FLJ20580	NM.017881.1	475	atgctgctctcccttcattata	363380	-	-
21560	FLJ20605	NM.017886.3	722	atgctgctctcccttcattata	363703	-	-
21561	FLJ20618	NM.017903.2	829	atgctgctctcccttcattata	363753	-	-

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21562	FLJ20625	NM.017907.1	274	agcgaatgacgaagctgaatga	363932	-	-
21563	FLJ20635	NM.01791.1	1294	agccacacacgaactcctcga	363933	-	-
21564	FLJ20641	NM.017915.1	1077	tgcgcgaacacgaactaaagtt	363929	-	-
21565	FLJ20647	NM.017915.3	880	taactcctcgaggaatgaact	363942	-	-
21566	FLJ20668	NM.017923.1	89	agatgcgcacatactaaactg	364036	-	-
21567	FLJ20694	NM.017925.1	546	tattgagccgaactgacataat	364208	-	-
21568	FLJ20699	NM.017931.1	777	aatttgctgtcttaactatg	364280	-	-
21569	FLJ20701	NM.017933.3	740	ctgaataatcgccactccaagt	364288	-	-
21570	FLJ20716	NM.017938.2	723	ctgttggttactacgaactac	364384	-	see also 7179 line
21571	FLJ20718	NM.017939.1	1819	tactaaatcgaggttagagttga	364405	-	-
21572	FLJ20729	NM.017953.2	1087	tctgcgcggaagcaagtattta	364741	-	-
21573	FLJ20758	NM.017952.4	829	attgtgaacacgagcctcttga	364694	-	-
21574	FLJ20772	NM.017956.1	191	tgtttatccagcagatcagaaga	364862	-	-
21575	FLJ20811	NM.018007.2	649	caacgcacattccctcattgaca	374426	-	-
21576	FLJ20859	NM.022734.1	344	aaacagagctgacatccttgaaga	383757	-	-
21577	FLJ20896	NM.024605.2	906	tgcacactctaaactttgtct	387812	-	see also 8665 line
21578	FLJ20898	NM.024600.1	1072	tgcgcctctgaactcttcacga	387759	-	-
21579	FLJ20972	NM.025030.1	160	aaagaacataacgaagaattga	393162	-	-
21580	FLJ20989	NM.023080.1	714	atgaagaattgaattcaatttc	385262	-	-
21581	FLJ21062	NM.024788.2	2714	aaacacactccgcactgaatag	390723	-	-
21582	FLJ21069	NM.024892.3	918	actgaagaatgcacttgagatag	389320	-	see also 8687 line
21583	FLJ21075	NM.025031.1	163	tattgtactgactgaactctga	393166	-	-
21584	FLJ21103	NM.024556.1	552	tgcgaacccctgataactacaa	387231	-	-
21585	FLJ21106	NM.025097.1	1357	tgcgaacatcgatcactgaag	393808	-	see also 8660 line
21586	FLJ21125	NM.024627.4	1387	ctctggactcgactaactctcc	386273	-	-
21587	FLJ21127	NM.024549.3	1280	tggttcgcgcgcacgaattatt	387108	-	-
21588	FLJ21144	NM.022774.1	1229	aattgcgcgcgcgctgactctgc	384119	-	-
21589	FLJ21148	NM.024860.1	805	atgtcgaactgacgaactctga	391518	-	-
21590	FLJ21159	NM.024826.1	910	acgcgcgaatgcacataaaga	391136	-	-
21591	FLJ21168	NM.025073.1	803	agaaactctgaatattgtgcc	393491	-	-
21592	FLJ21174	NM.024663.3	378	tgcgcgcgcacatacaactcc	391573	-	-
21593	FLJ21308	NM.024615.2	973	tgcgcgaactgcgaagtattcc	387987	-	see also 8668 line
21594	FLJ21415	NM.024738.1	395	cgtgataaactgcactccttgc	388764	-	transcription_regulat
21595	FLJ21477	NM.025153.1	251	ttgcacactgctgtcgaattt	394101	-	or
21596	FLJ21511	NM.025087.1	256	tgcgaacacgaactcattattt	393516	-	see also 8859 line
21597	FLJ21603	NM.024762.1	703	taattgcactcattcattaaat	390181	-	-
21598	FLJ21610	NM.022751.1	2259	aattgtcactctgcgaactctcc	383943	-	-
21599	FLJ21657	NM.023483.2	383	tgcgcataactctctctattt	393257	-	-
21600	FLJ21742	NM.032020.1	1744	ctgaacacatcgcaactcaatt	398692	-	see also 9088 line
21601	FLJ21749	NM.025124.1	602	tgcattatcactgactcttca	393818	-	-
21602	FLJ21777	NM.032206.1	1062	agccctgcactcctctgcaatg	399703	-	-
21603	FLJ21816	NM.024675.2	487	cagggatgactctactacaaga	389535	-	-
21604	FLJ21868	NM.022769.1	1124	cttgacgctcactcaactgaag	384020	-	-

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21605	FLJ21870	NM 023016.1	1007	tgctcaacgcgcgcctctacc	385044	-	-	-	-
21606	FLJ21901	NM 024822.2	2017	ttctccatccgcctcttact	388184	-	-	-	-
21607	FLJ21908	NM 024804.1	524	atgctgcgcgcgcctatctac	387161	-	-	see also 8664 line	-
21608	FLJ21919	NM 023016.3	1294	atgctgcgcgcgcctatctac	384995	-	-	see also 8538 line	-
21609	FLJ21940	NM 022938.2	1062	tgctgcgcgcgcgcgcgcgcgc	384358	-	-	-	-
21610	FLJ21941	NM 025040.2	634	atgctgcgcgcgcgcgcgcgcgc	393170	-	-	-	-
21611	FLJ21945	NM 025203.1	887	atgctgcgcgcgcgcgcgcgcgc	394372	-	-	-	-
21612	FLJ21986	NM 024931.3	822	tgctgcgcgcgcgcgcgcgcgc	392072	-	-	-	-
21613	FLJ22021	NM 024535.1	1320	atgctgcgcgcgcgcgcgcgcgc	386895	-	-	-	-
21614	FLJ22054	NM 018327.2	640	atgctgcgcgcgcgcgcgcgcgc	372125	-	-	see also 7506 line	-
21615	FLJ22104	NM 022918.2	1344	atgctgcgcgcgcgcgcgcgcgc	384925	-	-	see also 8538 line	-
21616	FLJ22160	NM 024585.2	593	atgctgcgcgcgcgcgcgcgcgc	387602	-	-	-	-
21617	FLJ22169	NM 024085.2	138	tgctgcgcgcgcgcgcgcgcgc	393618	-	-	-	-
21618	FLJ22170	NM 025099.1	697	atgctgcgcgcgcgcgcgcgcgc	385784	-	-	-	-
21619	FLJ22175	NM 025161.2	2451	atgctgcgcgcgcgcgcgcgcgc	394184	-	-	-	-
21620	FLJ22202	NM 024883.1	140	atgctgcgcgcgcgcgcgcgcgc	391650	-	-	-	-
21621	FLJ22246	NM 025232.2	557	atgctgcgcgcgcgcgcgcgcgc	394488	-	-	-	-
21622	FLJ22269	NM 032219.2	634	tgctgcgcgcgcgcgcgcgcgc	398706	-	-	-	-
21623	FLJ22301	NM 024836.1	941	tgctgcgcgcgcgcgcgcgcgc	391350	-	-	-	-
21624	FLJ22318	NM 022762.3	1135	tgctgcgcgcgcgcgcgcgcgc	384001	-	-	see also 8457 line	-
21625	FLJ22341	NM 024599.2	2220	atgctgcgcgcgcgcgcgcgcgc	387734	-	-	-	-
21626	FLJ22344	NM 024717.2	832	tgctgcgcgcgcgcgcgcgcgc	389517	-	-	-	-
21627	FLJ22353	NM 024587.1	792	tgctgcgcgcgcgcgcgcgcgc	387611	-	-	-	-
21628	FLJ22374	NM 032222.1	566	tgctgcgcgcgcgcgcgcgcgc	398720	-	-	-	-
21629	FLJ22378	NM 025078.3	370	tgctgcgcgcgcgcgcgcgcgc	393505	-	-	-	-
21630	FLJ22386	NM 024589.1	866	tgctgcgcgcgcgcgcgcgcgc	387617	-	-	see also 8656 line	-
21631	FLJ22390	NM 022746.2	591	tgctgcgcgcgcgcgcgcgcgc	383878	-	-	-	-
21632	FLJ22457	NM 024901.3	987	tgctgcgcgcgcgcgcgcgcgc	391861	-	-	-	-
21633	FLJ22471	NM 025140.1	908	tgctgcgcgcgcgcgcgcgcgc	393954	-	-	-	-
21634	FLJ22490	NM 024790.2	735	tgctgcgcgcgcgcgcgcgcgc	390744	-	-	-	-
21635	FLJ22531	NM 024650.2	630	tgctgcgcgcgcgcgcgcgcgc	388523	-	-	-	-
21636	FLJ22555	NM 024520.1	682	tgctgcgcgcgcgcgcgcgcgc	386611	-	-	-	-
21637	FLJ22557	NM 024713.1	828	tgctgcgcgcgcgcgcgcgcgc	389502	-	-	-	-
21638	FLJ22573	NM 024660.1	287	tgctgcgcgcgcgcgcgcgcgc	388702	-	-	-	-
21639	FLJ22609	NM 022072.2	886	tgctgcgcgcgcgcgcgcgcgc	382157	-	-	see also 8265 line	-
21640	FLJ22682	NM 024806.2	368	tgctgcgcgcgcgcgcgcgcgc	390844	-	-	see also 8748 line	-
21641	FLJ22635	NM 025092.1	387	tgctgcgcgcgcgcgcgcgcgc	393568	-	-	-	-
21642	FLJ22649	NM 021928.1	555	tgctgcgcgcgcgcgcgcgcgc	381277	-	-	-	-
21643	FLJ22662	NM 024824.1	599	tgctgcgcgcgcgcgcgcgcgc	391185	-	-	-	-
21644	FLJ22684	NM 025048.1	273	tgctgcgcgcgcgcgcgcgcgc	393242	-	-	-	-
21645	FLJ22688	NM 025129.3	1086	tgctgcgcgcgcgcgcgcgcgc	393827	-	-	-	-
21646	FLJ22692	NM 025049.1	797	tgctgcgcgcgcgcgcgcgcgc	393254	-	-	-	-
21647	FLJ22709	NM 024578.1	773	tgctgcgcgcgcgcgcgcgcgc	387440	-	-	-	-
21648	FLJ22729	NM 024883.1	811	tgctgcgcgcgcgcgcgcgcgc	389139	-	-	-	-

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21649	FLJ22746	NM_024785.2	366	gagcaacctctgaaactct	390654	-	-	-	-
21650	FLJ22757	NM_024898.1	1895	aaacttcaaacacgcgaag	391781	-	-	-	-
21651	FLJ22789	NM_032230.1	1627	aattatgctctgattgaga	396900	-	-	-	-
21652	FLJ22794	NM_020714.2	1285	ttctactggtgagctcttctt	382191	-	-	-	-
21653	FLJ22833	NM_022837.1	485	taagatcaacgaccactattt	384528	-	-	-	-
21654	FLJ22875	NM_032231.3	363	aaagatcatctggtttatctc	398913	-	-	-	-
21655	FLJ22938	NM_024676.2	1020	caagatgatacctcaatccatc	389008	-	-	-	-
21656	FLJ22944	NM_025145.3	193	aaagacatccgtctctacatt	394077	-	-	-	-
21657	FLJ22965	NM_022101.2	203	cgggaccgctcccgctgctgga	382288	-	-	-	-
21658	FLJ23018	NM_024810.1	833	caagcgccttaacacacttagt	390942	-	-	-	-
21659	FLJ23047	NM_024546.2	262	ctcagctctctgtctattaaa	387080	-	-	-	-
21660	FLJ23056	NM_024582.1	83	agagcaacgaagtttgaatccc	387560	-	-	-	-
21661	FLJ23058	NM_024696.1	388	ctgaatcatattcaacattat	389382	-	-	-	-
21662	FLJ23059	NM_032234.2	1312	tctctacagagcactgtatgt	398997	-	-	-	-
21663	FLJ23091	NM_024911.3	741	gaagcgcctgactgaattgaga	391989	-	-	-	-
21664	FLJ23129	NM_024763.2	1019	ctctgttttaactcaattcaaaa	390211	-	-	-	-
21665	FLJ23151	NM_024772.2	2329	atagacacacaaattttgaag	390420	-	-	-	-
21666	FLJ23186	NM_024616.1	255	tgtatcatcagacttatgtct	388054	-	-	-	-
21667	FLJ23191	NM_024574.2	2076	ggagcactctaaactctcaga	387433	-	-	-	-
21668	FLJ23221	NM_024578.1	246	gaagatcacttaattctcaaaa	387452	-	-	-	-
21669	FLJ23231	NM_025078.1	1038	taagatcaagctccactttccc	383508	-	-	-	-
21670	FLJ23235	NM_024943.1	671	tgaagatcccgactgttttttta	382405	-	-	-	-
21671	FLJ23259	NM_024727.1	1400	actcttaactcagctgataltag	389717	-	-	-	-
21672	FLJ23263	NM_025161.1	1025	agagagactcttgctgatactag	393781	-	-	-	-
21673	FLJ23306	NM_024530.1	778	cgcacactcctgctgaagctgc	386781	-	-	-	-
21674	FLJ23311	NM_024680.2	1357	gtctcaacgcctcagatgataag	389078	-	-	-	-
21675	FLJ23342	NM_024631.1	841	aaagagatctcgtcttaccattat	388303	-	-	-	-
21676	FLJ23403	NM_022068.1	825	ggagacagcttctcttgcaattt	382033	-	-	-	-
21677	FLJ23451	NM_024766.1	205	ataattcctctctcacttatct	390284	-	-	-	-
21678	FLJ23467	NM_024575.1	525	cgcctatccgcacgctgttgaac	387435	-	-	-	-
21679	FLJ23471	NM_024723.1	195	ggcttaccgcagcgttgatctat	389559	-	-	-	-
21680	FLJ23476	NM_024640.2	640	cagtttctctgtttattttgag	388428	-	-	-	-
21681	FLJ23514	NM_021827.1	1109	gaagcggattttccaagtcttc	381207	-	-	-	-
21682	FLJ23518	NM_024725.2	789	atcacagcctatctactgtaga	389594	-	-	-	-
21683	FLJ23550	NM_025063.1	697	tctcaagttgttgaagcattatt	393411	-	-	-	-
21684	FLJ23560	NM_024685.2	502	atgacacagctactgaagacac	389154	-	-	-	-
21685	FLJ23584	NM_024588.2	718	ggagacacagctctcaagagac	387615	-	-	-	-
21686	FLJ23594	NM_024781.1	708	caagaaatccacaggaactatgc	390634	-	-	-	-
21687	FLJ23654	NM_025505.1	1273	ctggagcgccttcagacttatcc	417992	-	-	-	-
21688	FLJ23657	NM_178497.2	369	cgtttctctctctcagactttcc	430695	-	-	-	-
21689	FLJ23703	NM_182554.1	83	tgtatcaatggcggaattttcc	434210	-	-	-	-
21690	FLJ23823	NM_173820.1	1067	tgtcttctctcgttgaggtttgga	426589	-	-	-	-
21691	FLJ23878	NM_144990.1	903	ggagagagctctctgtgtgaga	412464	-	-	-	-

transcription_regulat
or, cell cycle
see also 8673 line
see also 8262 line

see also 8490 line
see also 9127 line

see also 9880 line

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21692	FLJ25045	NM.18537.3	2102	aaacacccgacatcaacattcc	431141	-	-	-	-
21693	FLJ25056	NM.182530.1	236	acacattccctccctatact	434181	-	-	-	-
21694	FLJ25067	NM.182904.2	156	atctacataagaattatctcc	417285	-	-	-	-
21695	FLJ25102	NM.182926.1	729	caagctgaacacccctctcaag	434771	-	-	-	-
21696	FLJ25124	NM.144698.2	232	tggcagctccctctctctatctg	411465	-	-	-	-
21697	FLJ25143	NM.182900.1	596	tggactctctgaagacatctga	433969	-	-	-	-
21698	FLJ25161	NM.182900.1	596	ccctccactctctctctctg	434149	-	-	-	see also 10267 line
21699	FLJ25168	NM.182486.1	473	tggattctcaggctccactact	419881	-	-	-	-
21700	FLJ25224	NM.182495.2	762	ctctgttgagctcccaactatgc	433918	-	-	-	-
21701	FLJ25286	NM.182546.1	598	ttctcgaagaacacatacataa	417890	-	-	-	see also 9879 line
21702	FLJ25323	NM.189521.1	164	cagaatccctctctctatctcc	433083	-	-	-	-
21703	FLJ25328	NM.182483.1	780	tggacacacttggaactctact	417053	-	-	-	-
21704	FLJ25333	NM.182548.1	903	ggatattcgcacgaaatgaac	417924	-	-	-	-
21705	FLJ25351	NM.182525.3	529	aatttgatgaattgaagtatt	417826	-	-	-	-
21706	FLJ25359	NM.144597.1	1414	aggaaatacaactattcgaaa	410054	-	-	-	-
21707	FLJ25371	NM.182543.1	555	tttgttagcagtgaaatcata	417855	-	-	-	-
21708	FLJ25378	NM.182768.1	460	gaactcccggaagacatctacc	420892	-	-	-	-
21709	FLJ25393	NM.181645.1	799	gaattcaactcaagtaagatct	432668	-	-	-	-
21710	FLJ25409	NM.144652.1	1069	aatcccaagcccaattgaagacc	410866	-	-	-	-
21711	FLJ25414	NM.182343.1	157	gaagctcagaatacttaagtaa	415722	-	-	-	-
21712	FLJ25416	NM.145018.2	1908	gaagctgaacattctgattctaa	417219	-	-	-	-
21713	FLJ25421	NM.182512.3	1919	actctaatctgaattatctact	417382	-	-	-	-
21714	FLJ25422	NM.145009.2	697	aaactctgaattcttctacttt	412548	-	-	-	-
21715	FLJ25429	NM.182978.2	253	aaagcttgagctctctctatata	415904	-	-	-	-
21716	FLJ25436	NM.144581.1	876	ccatattgctctatcagatctaca	403951	-	-	-	-
21717	FLJ25444	NM.182761.1	1098	aaacacccagctcaggtatttc	420805	-	-	-	-
21718	FLJ25476	NM.182493.2	843	aaacacccagctcaggtatttc	417104	-	-	-	-
21719	FLJ25477	NM.182704.2	1388	gaagcttggaagacacttatctaa	411904	-	-	-	-
21720	FLJ25530	NM.182722.3	483	ctgtatgtttccctattctggg	420084	-	-	-	see also 9931 line
21721	FLJ25534	NM.182324.3	579	caattgttgagctctatctacca	422431	-	-	-	-
21722	FLJ25555	NM.182345.3	1399	tggcttcccaactaaagattgaa	415740	-	-	-	-
21723	FLJ25621	NM.188514.1	344	gaacaaacacccattgcttcc	438859	-	-	-	see also 10334 line
21724	FLJ25660	NM.182481.1	380	atgtccacccctctcattataaca	417034	-	-	-	-
21725	FLJ25694	NM.173804.1	821	cggacccctctcagatgaatact	426480	-	-	-	-
21726	FLJ25735	NM.182577.1	570	caaggacacatctgaattatctc	418166	-	-	-	-
21727	FLJ25736	NM.182578.1	740	caagatttgaagcttttgaaga	418230	-	-	-	-
21728	FLJ25770	NM.178555.2	1576	catctcccgcaatacaagaacac	431261	-	-	-	see also 10196 line
21729	FLJ25773	NM.182560.1	734	tgtgtctaacacaaagatttaagc	434451	-	-	-	-
21730	FLJ25791	NM.173559.1	684	ggaaacacactctctactaagt	426079	-	-	-	-
21731	FLJ25801	NM.173559.1	1013	ggaaacacacagcagatctcttc	426003	-	-	-	-
21732	FLJ25851	NM.174927.1	405	atgtccaccccgctcattctctcc	428717	-	-	-	-
21733	FLJ25854	NM.173572.1	729	ctgttttggttgctcagatctctcc	428275	-	-	-	-
21734	FLJ25855	NM.17882.1	104	ctgttttggttgctcagatctctcc	431367	-	-	-	-
21735	FLJ25972	NM.178922.3	2791	aaatgaaccccaactaacatgata	431499	-	-	-	receptor activity

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21726	FLJ25976	NM_174943.2	664	gagaaatgagctctcaacat	428771	-	-	-	-
21727	FLJ25989	NM_19851.21	152	tgaaagatgaccccttat	438858	-	-	-	-
21728	FLJ26016	NM_19847.1	101	tactctgagctgaacttc	438404	-	-	-	-
21739	FLJ30046	NM_144959.2	657	ccgtgacagctggaaagaca	410119	-	-	-	-
21740	FLJ30213	NM_145008.1	602	atgctggagcctcagtttase	412590	-	-	-	transcription_regulat or
21741	FLJ30277	NM_153008.3	967	ctgtgagagctcatttat	421814	-	-	-	-
21742	FLJ30294	NM_144332.2	149	gaaataatctgactctct	410593	-	-	-	-
21743	FLJ30373	NM_152479.1	223	ctctctatgaaagagctcc	417017	-	-	-	-
21744	FLJ30430	NM_153009.1	441	ccgctgtcagcgcctttaca	421818	-	-	-	-
21745	FLJ30469	NM_182573.1	333	gcctgtcacaactgacaatgc	434483	-	-	-	kinase_related, receptor activity
21746	FLJ30507	NM_153010.3	475	caactctctcgaagtattc	421821	-	-	-	-
21747	FLJ30525	NM_144584.1	485	gaaagcaattcagtttaaac	409977	-	-	-	-
21748	FLJ30634	NM_153014.1	796	tggatgaagatgaagttgaag	421856	-	-	-	-
21749	FLJ30655	NM_144643.1	1616	ttgacaagatgcacataaag	410667	-	-	-	-
21750	FLJ30668	NM_153015.1	877	gaactctatctgaaacaaatt	421878	-	-	-	-
21751	FLJ30672	NM_153016.2	479	aaacttggagctcaacatgc	421863	-	-	-	-
21752	FLJ30794	NM_152927.1	1187	caactgactctgaaattataga	417663	-	-	-	-
21753	FLJ30834	NM_152999.1	550	acggagctacagttcaattcc	418272	-	-	-	-
21754	FLJ30851	NM_198553.1	816	aaacaaagatgaagctctctc	439475	-	-	-	see also 10339 line
21755	FLJ30973	NM_152451.1	440	aaagcaatgaaagacataag	416918	-	-	-	-
21756	FLJ30980	NM_152517.1	1739	atgactctgattcttttca	417461	-	-	-	-
21757	FLJ31031	NM_182533.1	550	caaaagagctgaagctcttcca	434207	-	-	-	-
21758	FLJ31051	NM_153087.1	678	tgaagaagctcaccatagaag	423512	-	-	-	-
21759	FLJ31052	NM_152376.1	509	aaagcaagctctcctattcag	415905	-	-	-	-
21760	FLJ31153	NM_144600.1	484	aaactataactgaagctctc	410218	-	-	-	-
21761	FLJ31164	NM_145003.1	213	atgtgacacagatgaattccc	412579	-	-	-	-
21762	FLJ31166	NM_153022.1	755	atgactcagctctctctgata	421868	-	-	-	-
21763	FLJ31265	NM_152935.1	361	tgtgtgagctctccctgatacc	416255	-	-	-	-
21764	FLJ31338	NM_152468.1	1135	tgaagctgtgagacactctctc	416997	-	-	-	-
21765	FLJ31340	NM_152748.2	1634	caagcaactcagctgttctatag	420478	-	-	-	see also 9942 line
21766	FLJ31434	NM_152496.1	804	gaagccaaatcagctctcctta	417135	-	-	-	-
21767	FLJ31438	NM_152385.1	521	aaagttaagacatatactgc	416069	-	-	-	-
21768	FLJ31461	NM_152454.1	209	tgtgtgtgtgtgaactcatt	416955	-	-	-	-
21769	FLJ31528	NM_144679.1	112	tgtctcgagctctgttgag	417284	-	-	-	-
21770	FLJ31564	NM_144720.1	1802	caaaaagctctgcgaacatccc	411784	-	-	-	see also 9739 line
21771	FLJ31568	NM_152500.1	873	ctctctacagctctcagataga	417317	-	-	-	-
21772	FLJ31606	NM_153025.1	46	aaagaaagctacacattcaat	421890	-	-	-	-
21773	FLJ31737	NM_144384.1	196	ctaaagctgagctgctcttcc	412434	-	-	-	-
21774	FLJ31751	NM_152952.1	225	ttagctctcaactcaaatgag	419511	-	-	-	-
21775	FLJ31795	NM_144600.1	112	ttagcagagctcttatgagc	410293	-	-	-	-
21776	FLJ31810	NM_152570.1	651	aaactcaccagctctatgagc	418112	-	-	-	see also 9884 line
21777	FLJ31818	NM_152556.1	398	gaaggcgaagctgctgaagc	418075	-	-	-	see also 9881 line

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21778	FL31842	NM_152487.1	713	aaactgtatatacaatgaata	417074	-	see also 9878 line
21779	FL31846	NM_144974.1	792	aggaacatgataccacagaca	417165	-	-
21780	FL31951	NM_144726.1	1872	tggaacacatgctccagaaaga	417180	-	receptor activity
21781	FL31952	NM_144682.2	1243	aaatgattatgctctctctct	417295	-	-
21782	FL32000	NM_152498.1	409	aaatgacaaagttaataaattt	417106	-	kinase related
21783	FL32011	NM_152609.1	851	caagtccaaagtgttatataga	418774	-	see also 9899 line
21784	FL32021	NM_182516.1	572	aggttcgaagacgctcactatga	434053	-	-
21785	FL32028	NM_152680.1	452	caagtgttttaacagcatatga	419693	-	-
21786	FL32063	NM_153031.1	779	caagttaatgctctattctct	421979	-	-
21787	FL32110	NM_181646.2	1082	cgttcacacatgccaaatcgaca	432685	-	-
21788	FL32112	NM_153035.1	276	aaacatgcacagctaaactctct	421984	-	transcription regulat
21789	FL32206	NM_152497.1	855	aaacacatctccatgaattct	417145	-	or
21790	FL32252	NM_182510.1	1131	gaatagatgcctgaactaacac	434032	-	-
21791	FL32312	NM_144709.1	1449	gcagactgcgtcaactcttca	411549	-	-
21792	FL32334	NM_144565.1	220	tggatgagatgcacaaatttca	409679	-	-
21793	FL32343	NM_152434.1	437	aaatgacatggcagaaatbat	416770	-	-
21794	FL32363	NM_198566.1	2053	atgcatccaaacacagattctct	439653	-	-
21795	FL32384	NM_144608.1	814	cagagatccagaaagagatgctg	410260	-	-
21796	FL32416	NM_144818.2	394	gaagactgctgctcaacaaagc	410352	-	-
21797	FL32421	NM_144695.1	638	aaagcaagtatcgataattcaaa	411347	-	-
21798	FL32440	NM_173985.1	438	tfgatcggcaactaaaccttca	427402	-	see also 10110 line
21799	FL32447	NM_153038.1	535	caagcaactaaacggttaaacg	422027	-	-
21800	FL32549	NM_152440.1	1128	ataagagacacacatctgattct	416829	-	see also 9866 line
21801	FL32642	NM_152415.1	397	catatagacgaataacagaag	418445	-	-
21802	FL32670	NM_144612.3	1387	tggatccttaacgaactctaca	410320	-	-
21803	FL32675	NM_173811.2	540	gcgtatagatgctgtgtgttc	428228	-	-
21804	FL32682	NM_182542.1	1055	tggcttcagagagatgaatac	434294	-	-
21805	FL32702	NM_152337.1	332	caatgaactaaactgaacaaag	415702	-	-
21806	FL32734	NM_144681.1	736	agttgatttcacagctcaacag	411268	-	-
21807	FL32742	NM_152580.1	370	tggtttccaaactctgtttaa	418246	-	-
21808	FL32743	NM_152020.2	855	aaagcaactgttcgaagtaaac	412770	-	-
21809	FL32745	NM_144978.1	1657	caagctttcttcgaataaag	412255	-	-
21810	FL32762	NM_145023.3	1789	agtcaggttccttcgaataaag	412836	-	-
21811	FL32771	NM_145017.1	146	agtcaggttccttcgaataaag	412836	-	-
21812	FL32779	NM_173521.1	1183	caatcaatgaactcactatgag	425420	-	-
21813	FL32783	NM_144968.1	568	aggttccaaactcactatgta	412005	-	-
21814	FL32784	NM_144623.1	1121	caagagatgctgaagaaatttc	410444	-	-
21815	FL32785	NM_152494.1	399	cgttgccagctctcactatgac	417109	-	-
21816	FL32786	NM_144646.1	91	tggcgcagctgttcaactgttc	410728	-	kinase related
21817	FL32796	NM_153006.1	508	aggaagagatataatcaagt	423292	-	-
21818	FL32800	NM_152847.1	1400	aaattgcacactagactgttc	419494	-	-
21819	FL32825	NM_152492.1	860	gaactatcgtgattctgattact	417087	-	-
21820	FL32827	NM_173081.1	1608	gaactgaagcgaactgaattatg	424665	-	-

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21821	FLJ32830	NM_152781.1	711	clagtgcttactactaagcatgt	421110	-	-	-
21822	FLJ32831	NM_153040.1	538	aggaaaggtccctactactatgag	422033	-	-	-
21823	FLJ32844	NM_173543.1	1210	aagcaagatcttactactaaga	423756	-	-	-
21824	FLJ32855	NM_182791.1	169	aagagaaacacgtctacttgaag	435289	-	-	-
21825	FLJ32859	NM_182538.1	473	caagcttgcagacagcttactacc	417175	-	-	kinase related
21826	FLJ32880	NM_152162.1	1105	atgcctctgggtagcagtaacct	420822	-	-	-
21827	FLJ32884	NM_147702.1	1482	tgcctcaggtctgctatgaagtc	411488	-	-	-
21828	FLJ32915	NM_145014.1	868	atragctgattatcagtaacca	412630	-	-	-
21829	FLJ32926	NM_144577.1	1273	tcagagcagacagctctgtatgc	409908	-	-	-
21830	FLJ32934	NM_144622.1	1568	caagcttgtagctatgctatgtt	410430	-	-	-
21831	FLJ32940	NM_144696.2	2032	tggaaacttgatctgcttgaact	411437	-	-	-
21832	FLJ32942	NM_144594.1	225	aagttctcgcgttgaattgaat	410104	-	-	-
21833	FLJ32949	NM_173812.3	273	gagatccaaagctctgaagaagc	428241	-	-	-
21834	FLJ32954	NM_144713.1	1303	tgcagattctctactatgctgag	411658	-	-	-
21835	FLJ32955	NM_153041.1	340	aatttactctatctatctatgc	4229048	-	-	-
21836	FLJ32965	NM_182506.1	1243	tcgaagtctcaagcttaagctcc	434012	-	-	-
21837	FLJ33008	NM_152432	1011	tttggagacctcaaaagtgctga	416889	-	-	-
21838	FLJ33069	NM_144643.1	251	ctgttctctcttgatgttatcc	410813	-	-	-
21839	FLJ33084	NM_152500.1	1821	tgtctatagctccagctcttatgc	417229	-	-	-
21840	FLJ33167	NM_152863.1	935	aggaaagcttgcagctcagattca	419766	-	-	-
21841	FLJ33207	NM_178554.2	472	ggatcagctcagctcgaattcc	431210	-	-	-
21842	FLJ33215	NM_148594.1	1391	aggaaatttbaactctgtatgc	415149	-	-	-
21843	FLJ33298	NM_173636.1	1248	ggatctcaagacatcatataga	428928	-	-	-
21844	FLJ33387	NM_182526.1	367	gaagcttggtggtccctcttatct	434167	-	-	-
21845	FLJ33496	NM_182587.1	837	cgaacctctgaatcccaactca	434540	-	-	-
21846	FLJ33516	NM_152423.2	1832	tgccttggtgcatctcaactt	416578	-	-	-
21847	FLJ33534	NM_182586.1	398	tggatgtccacagctgaattca	434526	-	-	-
21848	FLJ33590	NM_173821.1	1522	ctgtctctccaagcttatctcc	428336	-	-	-
21849	FLJ33600	NM_196478.1	973	gaicccgcagacgttctgacc	438452	-	-	-
21850	FLJ33620	NM_178924.3	1729	gaagacagattgaattcttgaag	431761	-	-	-
21851	FLJ33641	NM_152687.1	604	agccatgaattctcaattgaacc	419808	-	-	-
21852	FLJ33651	NM_182580.1	107	tcggaagacctctbaactctcc	434557	-	-	-
21853	FLJ33705	NM_173854.1	677	aagttctctcaactcttaattgag	434518	-	-	-
21854	FLJ33708	NM_173875.1	300	caagtgatgctctctttctttt	427313	-	-	-
21855	FLJ33718	NM_173960.2	628	aagatctactctgctctatcatca	439408	-	-	-
21857	FLJ33718	NM_153221.1	1079	actgcagctcagctcttactctc	422140	-	-	-
21858	FLJ33768	NM_173610.1	328	atgaagagagtgcttaactactt	426499	-	-	see also 9376 line
21859	FLJ33790	NM_173563.1	465	cgcgtctactctgctctgaattgc	428299	-	-	-
21860	FLJ33810	NM_182558.1	542	gaattgacagcagctgattgaatg	434448	-	-	-
21861	FLJ33814	NM_173510.1	437	tgtgtcactcagatgtgtaggc	425232	-	-	-
21862	FLJ33817	NM_152448.1	717	caagaagctctctctgtatcagc	415756	-	-	see also 10077 line
21863	FLJ33860	NM_173644.1	373	aagttgcaacctctcaaacacaa	425940	-	-	-
21864	FLJ33915	NM_182613.1	1565	caagctcaactcaaacatcatatg	434682	-	-	-

see also 9725 line

see also 9376 line

see also 10077 line